Volume 75 No 4
April 2007

Amateur Radio

THE MAGAZINE FOR AUSTRALIAN RADIO AMATEURS

WIRELESS INSTITUTE OF AUSTRALIA

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The Dish

on display at Parkes 4–6 May

Bill Roper VK3BR reviews

the bhi ANEM
(amplified noise eliminating module)

Short antennas:
running the current right at the top
Lloyd Butler VK5BR

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GENERAL

New antenna for VK5ROC 5
Keith Gooley

Parkes – the radio telescope and the WIA AGM 9
Robert Broomhead VK3KRB

Beware of unrecognised and undetected loss! 11
Felix Scerri VK4FUQ

Sexy Socks – Amateur radio, retail style 20
Michael Ampt VK3CH

Book review – Communications for Survival and Self-Reliance 24
Dr Hank Prunckun VK5JAZ

QSLs from the WIA National QSL collection 40
Ken Matchett VK3TL, Hon. Curator

Scarborough Reef – The expedition to the rarest DX entity 46
Kan Mizoguchi JA1BK

WICEN Tasmania (south) activated for bushfires 51
Roger Nichols VK7ARN

Wanted – A Magic Wand. 52
David Bell VK3FGE

Quick HF antennas 53
Trevor Quick VK5ATQ

TECHNICAL

Top loading by reverse feed 6
Lloyd Butler VK5BR

A DRM down-converter for 455 kHz IF receivers 12
John Titmuss VK4JWT

160 metre noise cancelling 14
Mick Hort VK2BZE

A function generator 18
Dale Hughes VK2DSH

Equipment Review — The bhi ANEM (amplified noise eliminating module) 25
Bill Roper VK3BR

COLUMNS

ALARA 27
AMSAT 37
An expanding world VHF/UHF 48
Book review 5
Contests 41
Cover story 17
Directory 56
DX – News & Views 45
Editorial comment 2
Gridsquare Standings 26
Hamads 54
News from... 31
VK2 36
VK3 31
VK4 31
VK5 33
VK7 32
Over to you 11, 30
Silent keys 13, 39, 47
Spotlight on SWLing 39
WIA comment 3
WIA News 4

Our Cover this month

'The Dish' at Parkes is connected with momentous events. Among these, the moon walk, the movie of the walk and now the WIA 2007 AGM. Photograph courtesy of Emil Lenc.

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Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

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Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

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A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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Editorial Comment

Peter Freeman VK3KAI

One quarter of the year gone already! Things have been busy, but it is always somewhat surprising how quickly the months slip past. The year is certainly into the "hamfest"/"Field Day" season, with events occurring regularly.

I personally try to attend several such events each year, if only for the chance to catch up with others in person. Of course, one may also be tempted by some of the "goodies" on offer.

From all reports, the Central Coast Amateur Radio Club event at Wyong is probably the largest that we have in Australia. It will be interesting to see how the forthcoming Centre Victoria RadioFest at Kyneton later this month compares. This event is very interesting, as it sees three clubs cooperating to hold a single event, rather than running one each.

This event, if successful, may see a change in the way these events are organised, with perhaps some rationalisation of the number of events being held. Time will tell the story.

WIA Annual General Meeting

Early May will see many amateurs gathering at Parkes for the WIA Annual General Meeting. By the time that issue reaches readers, the voting for office bearers will have closed, so some decisions will have been made before we get to Parkes.

The organising committee has an interesting program scheduled, with the highlight being the technical tours of the Parkes Radio Telescope. I do hope that those planning to attend primarily for the tours will participate in the AGM. I am planning to attend the event, so I look forward to meeting many readers.

Additional details can be found on our cover story commencing on page 9, or via the WIA web site.

Publications Committee activities

This magazine is published regularly because of two key groups of people: those who contribute articles for publication, and the members of the Publications Committee.

The combined efforts of the members of the committee ensures that we have content ready to publish, that it has been reviewed to ensure that the material makes sense, that any diagrams are clear, and that we have hopefully removed any typographical and grammatical errors that may have slipped through the review process.

The committee has several ideas and issues that are under discussion. One process that we have commenced is to increase the number of review articles that appear in the magazine. For example, I expect that we will publish a review of the Yaesu-Vertex FT-2000 in the May issue. This month we have a review of the bhi ANEM DSP processor.

We will attempt to review a mixture of items, both transceivers and ancillary equipment. Of course, a review process requires some time to be spent exploring the item before the drafting of the review article. Our other requirement is cooperation from the equipment suppliers. I am happy to report that most suppliers that we have approached have been very willing to assist through loaning us equipment.

This issue

In our DX News column, we see that the DX hunters will be busy this month, with both Swains Island (a new entity) and Scarborough Reef being activated. Good hunting!

In addition to the normal range of news columns from our contributors, we also have a slight tendency this month towards antenna related articles. Lloyd Butler VK5BR tells us of his experiments in deliberately attempting to create an out-of-balance antenna feed. Felix VK4FUQ reports on his fault-finding activities with an antenna and feed line.

Michael VK3CH reports on a different style of amateur radio retail activity. Bill VK3BR reviews the bhi ANEM DSP processor, whilst Hank VK5JAZ reviews a book about emergency communications. Dale VK2DSH describes a useful function generator.

I trust that you all enjoy this month's reading.

73 Peter VK3KAI **ar**

Centre Victoria RadioFest
Kyneton
Sunday 22 April
see page 34

Michael Owen VK3KI

The Advisory Committees

The next step (and perhaps last step) in the evolution of the WIA from a state and territory based federation to a single national entity is about to happen.

The WIA Constitution provides for Advisory Committees, initially in respect of each area previously the responsibility of a Division, with the first members being the members of the then Council of each Division when the Constitution was adopted who were willing to be members of the Advisory Committee.

After three years the Advisory Committees are to be elected, but with the Board able to appoint one member to each Advisory Committee.

The Constitution thus sets out the bare bones of the structure, leaving the Board to fill in the details by making regulations.

It did not turn out to be an easy task.

The Board first seriously discussed the structure of the Advisory Committees at its April 2005 meeting.

Since then, a great deal of time has been devoted to identifying the issues and trying to find solutions.

One temptation was to make it all too big and too elaborate, another was to say let's not bother, they cannot do anything anyway. But at least it forced us to go back to the basic questions, starting with the question what could or should an Advisory Committee do?

Of course, the fundamental role is to advise; that is what the Constitution says.

But is that all?

We are not trying to insert some group between the WIA's Board and the members. We regard the direct contact between the WIA, its members and its affiliated clubs as an essential element of the change from a federal structure to a national structure.

Essentially, we must look to the Advisory Committees to provide a local WIA presence.

Obviously, we want the WIA to be represented at hamfests and the like, and indeed, thanks to various Directors and people like Chris Flak and others, the WIA has been represented at very many amateur functions. But the 7 Directors cannot go to every such event across the country, and the WIA needs help to be represented and promoted at such events.

The Queensland Advisory Committee has organised for the WIA several very successful meetings of club representatives. If requested, I have no doubt that Advisory Committees would be able to organise these functions for us.

Frankly, I do not know how these roles will develop, even though I am sure there is a real need.

We then looked at the geographic areas to be the responsibility of each Advisory Committee and how many members were needed for each Advisory Committee.

In the 'previous' WIA, different solutions in different places had been found. For example, the Queensland Divisional Council, covering the vast area from the north to the south, had evolved to a representative body, with members from the major centres meeting by phone conference. On the other hand, the Northern Territory, basically Darwin and Alice Springs, were part of a single Division, with its centre in Adelaide.

We were attracted by the idea of more smaller geographic areas ignoring state borders, in part overcoming the problem of unusual distances.

I floated the idea of new and smaller geographic areas at a number of meetings in different parts of Australia. Many people expressed the view that the present boundaries should be preserved. Perhaps it was a rejection of change. Perhaps it was a belief that what had worked well should be kept. We concluded that it was too soon to change the areas from the state and territory boundaries, though we thought it right to create a new area for an Advisory Committee for the Northern Territory.

A much more difficult question was how large should the Advisory Committees be.

We reached the conclusion that defining different structures for different geographic areas did not make sense, and that a single model was needed.

We also concluded that a small effective group was better than a large group. In reaching that conclusion we were conscious of the problem in a state with a population spread over a large area, such as Queensland, and we hope that its Advisory Committee members do not all come from the same region.

We reached the conclusion that in addition to the member appointed by the Board (called in the Regulations the Nominated Member), there should be three other members.

We decided that each Advisory Committee (three elected members and the Nominated member) should appoint one of their number as Chairperson, who keeps the Board informed and otherwise conduct their business in the way they see best suiting them.

So far as the election process is concerned, we decided that we should follow the procedures that we had adopted for the postal election of directors, centralising the process to the national office, and if an election was necessary for a particular area, we can insert the voting papers in the Amateur Radio magazines for that state or territory.

So, the Board reached its conclusions, on many issues balancing apparently competing considerations and then formulated the Advisory Committee Regulations and published them in January this year, with a news release on 17 January 2007, placing the complete Regulations on the WIA website.

So at its face-to-face meeting in March, the Board started the process by appointing a Returning Officer and is currently addressing the appointment of Nominated Members for each Advisory Committee. The formal Notice seeking nominations will be in the May 'Amateur Radio'. That will also set out the timetable for the further steps.

The one thing that one does learn from the process the Board has followed in formulating this approach, is that there are an untold number of permutations available on very many of the issues, and it is far from clear which is really the best overall. The Board has adopted what it considers to be the best solution, but has also agreed to review the whole process next year, in the light of experience.

I believe that we can turn these local Advisory Committees into one of the strengths of the national WIA, providing a better service for members and a higher profile for the WIA. Whether that belief is right will depend largely on the people who become the members of each Advisory Committee. Their support of the WIA can only advance the WIA.

ar

WIA News

WIA Board announces Club Grant Scheme for 2007

The WIA Board at its meeting in Melbourne over the weekend of 10 and 11 March 2007decided to allocate $5,000 to the Club Grant Scheme for 2007.

The Scheme, introduced last year, had been very successful and this year the scheme will operate on the same rules as last year.

Clubs affiliated with the WIA having at least 50% of their members also WIA members qualify under the WIA Club Grants Scheme to apply for a grant to support a useful and/or innovative project undertaken or to be undertaken by the Affiliated Club. The 50% WIA membership refers to 50% WIA membership of licensed members excluding full time students.

The Rules of the Scheme are on the WIA website and advertisements calling for submissions will be published soon.

Jim Baxter VK3KE appointed WIA Treasurer

Sadly, Bruce Bathols VK3UV who has been WIA Treasurer during a period of great change presenting many challenges, is now finding the pressures of time and family too great, and asked the WIA Board to relieve him of the responsibility of Treasurer, though he was happy to continue in a supporting role.

Jim Baxter VK3KE has been providing Bruce with assistance for some time, assisting with the review and revision of the structure of the WIA's accounting system. Jim has been Treasurer for Amateur Radio Victoria and has a background of many years university administration.

The WIA Board at its meeting in Melbourne over the weekend of 10 and 11 March 2007 appointed Jim Baxter VK3KE WIA Treasurer with Bruce Bathols VK3UV continuing as Assistant Treasurer.

WIA Board reviews WIA Examination Service

The WIA Board at its meeting over the weekend of 10 and 11 March 2007 undertook a detailed review of the WIA Examination Service.

The Board has appointed a Committee to oversee this important activity. The Examination Service Committee will comprise Owen Holmwood VK2AEJ (coordinator), Fred Swainston VK3DAC, Ron Bertrand VK2DQ, Robert Broomhead VK3KRB (systems) and the WIA President for the time being.

It was considered that the WIA Assessment system was working well, and that many clubs were providing valuable training for candidates for amateur examinations, though some clubs may not have appropriate resources.

The Board has approved the introduction of WIA Learning Facilitators. WIA Learning Facilitators will replace the Invigilators, currently nominated by the clubs. Under the previous approach to conducting amateur examinations, the Invigilators actually conducted the examination, and the papers were returned to Melbourne for marking. Today, with the accredited and WIA registered Assessors, the previous Invigilators have in many cases become WIA Assessors, or now assist the Assessors conducting assessments.

Every Invigilator registered by the WIA since June last year has been advised that the WIA was going to introduce this change, and that the WIA would write to them and invite them to qualify as WIA Learning Facilitators.

It is intended to continue the identification of the primary examination/ training contact at each club as the Group Leader, though the Group Leader will need to be qualified as a WIA Learning Facilitator.

Further information on how to apply for qualification as a WIA Learning Facilitator will be announced shortly.

"The purpose of these changes is to further enhance what has been one of the most successful initiatives of the WIA to take advantage of the new ACMA amateur examination structure, particularly the new entry level licence and to attract new amateurs." said WIA President Michael Owen VK3KI.

WIA Board meets in Melbourne

The WIA Board met over the weekend of 10 and 11 March 2007 at the WIA premises in Caulfield, Victoria.

The WIA Directors, together with Secretary Ken Fuller VK4KF, new Treasurer Jim Baxter VK3KE and Assistant Treasurer Bruce Bathols VK3UV worked from 9.30 on Saturday morning until 4.30 on Sunday afternoon addressing a big and important agenda.

Among many matters, some reported separately, the Board reviewed the preparation for the ITU's World Radiocommunications Conference, to be held in November this year in Geneva for four weeks, with a number of items directly or indirectly affecting the amateur service. The Directors listened to a telephone briefing by Keith Malcolm VK1ZKM. The Board reconfirmed its earlier decision to nominate Keith as a delegate on the Australian delegation for the amateur service.

The Board reviewed the position in respect of the ACMA outsourcing, in particular the critical importance of the WIA retaining the examination management function.

The magazine, Advisory Committees, BPL, emergency communications, the QSL service and improving the WIA website were also considered, and a budget for the 2007 financial year was also fixed.

ACMA Measures BPL Emissions at Mt Beauty

The Australian Communications and Media Authority (ACMA) performed background noise and emission measurements at the Mt Beauty BPL trial in Victoria, over the 20th –21st February.

The measurements were in response to an interference complaint lodged with ACMA by Ian Paul VK3LJJ.

Gary Smith, Manager BPL Projects Team Regulation and Compliance Branch, and Colin Payne, Regulation and Compliance Branch Melbourne, represented ACMA. Yoram Apter, Project Manager BPL, represented SP-Ausnet, and WIA Director Phil Wait VK2DKN represented the WIA.

continued on page 5

New Antenna for VK5ROC

Keith Gooley
VK5OQ

The Elizabeth Amateur Radio Club operates a repeater on 70 cm located at Lower Light, on the flat plains about 40 km north of Adelaide. On Friday February 23rd, four Club members and two riggers installed a new antenna at the top of the 53 m tower. Prior to this, the repeater had been operating with an experimental antenna, a single folded dipole at about 8 m above ground. The results with this antenna were quite encouraging so a 4-dipole array was constructed by Dennis VK5FDEN and Keith VK5OQ.

This array was installed at the top of the tower by the riggers and a feedline of Andrews LDF5-50 (22 mm) Heliax was hauled to the top. A second similar feedline was also installed to be used at some future date for a purpose yet to be decided. The 70 cm array has a gain of about 8 dB and a front to back ratio of about 10 dB. The wide beam is aimed in the south-east direction to cover the Adelaide metropolitan area and the Hills. Due to the modest F/B ratio, coverage is 360 degrees and should cover the mid north and upper York Peninsula as well.

Figure 1 l to r. New member Paul, Club Secretary Paul Gale VK5ZKG and John Ross VK5NI hauling one of the two LDF5-50 coaxes to the top of the tower. The workers also give some scale to the structure

To give some scale to the shot looking up the tower, the angle iron making up the 4 corners of the tower is 200 x 200 x 13 mm: a very substantial structure.

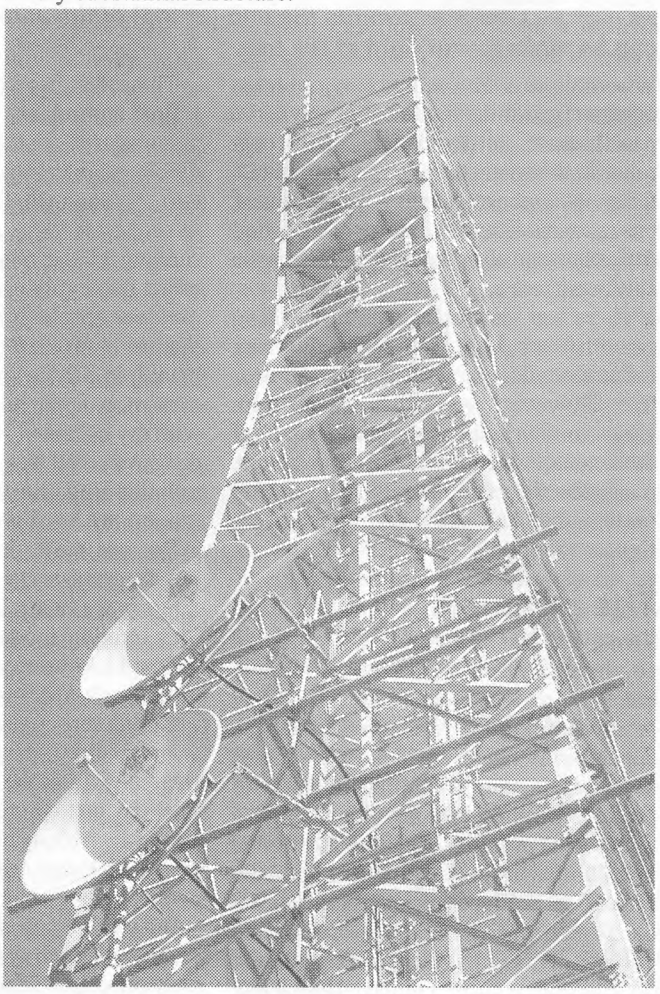

Figure 2 53 m tower, repeater antenna is at the top on the left.

continued from page 4

ACMA Measures BPL Emissions at Mt Beauty

As expected, high level BPL emission was measured in the trial area. The maximum notch depth measured within amateur bands was about 35dB.

Phil Wait recorded observations of BPL emissions received on Ian Paul's amateur transceiver and G5RV antenna. Those observations confirmed that in the vicinity of Ian Paul's QTH, SP-Ausnet has notched all affected HF amateur bands except for 10 metres.

SP-Ausnet demonstrated new network control software that allows remote notching of frequencies or bands of frequencies, in any segment of their trial BPL network, from an office anywhere.

As the maximum notch depth was measured at about 35dB, the WIA is of the opinion that both software and hardware notching will be required to adequately protect amateur radio operation from substantial interference from BPL emission, and that should be the focus of further development by BPL equipment manufacturers.

The WIA has now attended ACMA measurement events at Mt Nelson (TAS) and Mt Beauty (VIC) BPL trials.

It is apparent that all stakeholders involved in BPL trials are now taking interference complaints from radio amateurs very seriously, and are making changes to their BPL technology and systems to improve the outcome for radio amateurs.

ar

Top loading by reverse feed

Lloyd Butler VK5BR

Where short antennas have to be loaded with inductance, there are various ways of getting the current running as high as possible towards the end (or top) of the antenna radiator. But here is a way where the highest current can be made to run right at the top.

Where an antenna radiator is operated against ground, there is always the problem of getting antenna current running as high up the antenna as possible. Often the highest current is at the base of the antenna where it can do least good for radiation, with most of it lost in the earth resistance.

There are various systems of adding capacity top hats and series loading inductors placed well up the radiator line. However, we still finish up with almost no current running at the apex of the antenna where high current might be most effective. But here is an interesting system that can put maximum current right at the top.

The principle

Two plates at the end are connected so that their coupling to ground is unbalanced. This in itself has little effect in unbalancing the line currents but the capacitance between these two plates is resonated with a parallel inductor to produce a tuned circuit with as high a Q factor as possible. The line is coupled unbalanced into the inductor and the effect is to produce a high voltage across the plates equal to Q times the applied voltage. This, in effect, multiplies the out-of-balance current reflected to the line by the factor Q.

This effect became very apparent when I first started experimenting with EH antennas (which all have an unbalanced dipole connection) and I found that the current running in the centre conductor of the coax feed line was around twice that running in the outer coaxial braid. The effect was explained in more detail in my previous article (Ref 2) and, in particular, Figure 4 of that article. The whole principle I have just outlined became even more apparent when I experimented with my balanced X3 antennas and found out how well they worked by simply unbalancing the tuned circuit formed around the X3 dipole.

But one really important fact showed up: for transmission line lengths of a quarter-wave or less, the unbalanced (or common mode current component) reached a maximum close to the dipole or antenna termination connection and was still reasonably high running back down the line. So here we achieve highest current right at the top or far end of our line pair just where it can do most good simply by making a terminal unit with two plates resonated against a high Q inductor connected for an unbalance.

But we don't need to build a special type of antenna, such as the EH, to produce the phenomenon. Just concentrate on the design of a terminal unit that encourages the current imbalance in the feedline.

There is probably plenty of scope for experimentation with the size of the plates, and the separation between them, to get best feedline current imbalance. I chose plates 5 cm square and a length of about 1% of a wavelength. The only reason for doing this was that I already had the plates available that I had recovered from previous experiments with the X3 antennas.

Terminal unit for 40 metres

I turned my 40 metre (or 7 MHz) X3 into the terminal unit by discarding the original two-coil assembly which it originally had and wound a single inductor placed between the two original 50 cm square plates forming a dipole. The arrangement is shown in Figures 1, 2 and 3. For the line pair (as in the original X3), open wire TV line is used. This is matched at the transmitter end using a Z Match tuner.

Terminal unit for 80 metres

I figured that the reverse feed idea might have more application to the 80 metre band as most radio amateurs usually find they don't have enough space for an

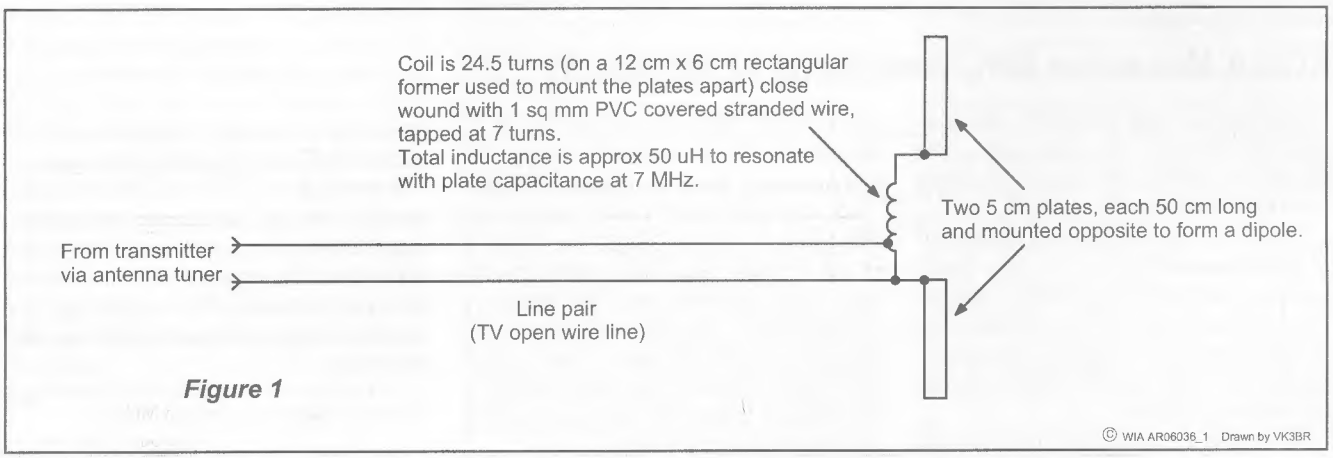
Coil is 24.5 turns (on a 12 cm x 6 cm rectangular former used to mount the plates apart) close wound with 1 sq mm PVC covered stranded wire, tapped at 7 turns.
Total inductance is approx 50 uH to resonate with plate capacitance at 7 MHz.
Two 5 cm plates, each 50 cm long and mounted opposite to form a dipole.
From transmitter via antenna tuner
Line pair (TV open wire line)
Figure 1
© WIA AR06036_1 Drawn by VK3BR

Figure 1 – 7 MHz terminal unit for reverse feed antennas (function is to encourage out-of-balance line current).

80 metre half wave and usually have to operate what wire they can fit in against ground return. For 80 metres, I tried out two plates side by side but spaced 10 cm apart. This reduced the size of the terminal unit to that of a dipole assembly and also increased the capacitance between the plates. The higher capacitance allowed me to tune the circuit to resonance with a smaller coil than would have been required for the dipole assembly.

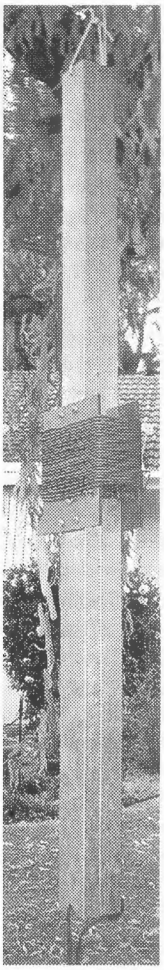

Figure 2
7 MHz terminal unit.

The arrangement for the 80 metre (3.5 MHz) system is shown in Figures 4, 5 and 6. Open wire line pair is a bit hard to get so that I have given an alternative using "Figure 8" power flex for the transmission line. I have suggested this as a possible alternative as its transmission loss is fairly low at 3.5 MHz and I have carried out tests using it. However, I don't recommend its use on the higher frequency bands, where the losses can get quite high (particularly in the resonant feeder type mode which is used). Figure 7 is a photo of the open wire TV type line alongside the power flex.

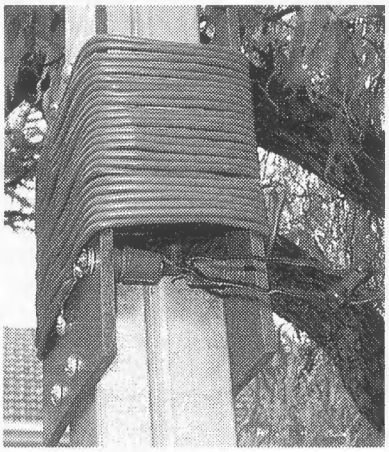

Figure 3 - Coil of 7 MHz terminal unit.

Tuning up

The precise frequency of resonance between the plate capacitance and the shunt inductor in the Terminal Unit is not critical. It is simply set somewhere within the frequency range of the relevant band. This can be easily checked using a dip meter poked near the coil with the feedline disconnected from the coil. As the open wire feed line is allowed to become partly resonant itself, reactance is fed up the line from the Z Match to bring the antenna circuit precisely in tune and is properly matched by adjustment of the Z Match.

The degree of current imbalance (or common mode current) which results in radiation from the feedline can be checked by inserting an RF ammeter in each leg of the line connected to the Terminal Unit. Using the dipole type plate assembly as shown in Figures 2, 3 and 4 (and with plates about 1% of a wavelength long), I usually find that the current in one line leg is about double that in the other. In the case of the 80 metre terminal unit as shown in Figures 4, 5 and 6 (also with plates about 1% of a wavelength long), the currents measured in the ratio of 2:3. Perhaps this lesser ratio means that particular design, set out to limit the physical size of the assembly and the resonating coil, could be improved, or perhaps it is just a function of the lower operating frequency of 3.5 MHz. This might be a further area of experimentation.

If the length of unbalanced feedline current extends more than a quarter wavelength down the line, the common mode current peak could be further down than the top end of the line. I suggest that, if the line length is greater than a quarter wavelength, some form of balun unit or out of balance trap be fitted at the quarter wave point so that the line currents beyond that point towards the transmitter are balanced.

It seems unlikely that, in the usual amateur radio backyard, more than a quarter wave of line for 80 metres would be needed, requiring a trap. Also the balanced output of the Z Match might provide a suitable limit to stop too much common mode current component getting back into the radio shack. This might not be true for 40 metres but I have not yet attempted to build a suitable trap for the twin line on that band. However, I have made and tested one for 20 metres and this is shown in Figures 8 and 9.

Clearly, for 40 metres the coil would require enlargement for longitudinal resonance at 7 MHz. One might think of using a ferrite type of core in a coupled circuit but there can be difficulties in selecting the right core characteristics to suit the particular line impedance at the point of insertion. Get it wrong and the result can be an overheated core and for this reason I prefer to stay with the open coil.

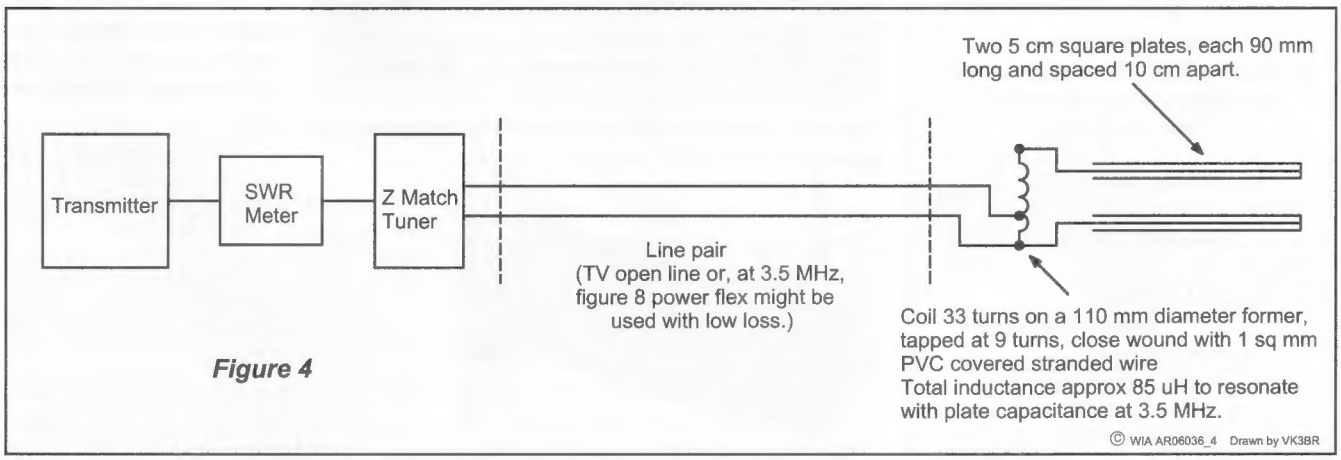
Two 5 cm square plates, each 90 mm long and spaced 10 cm apart.
Transmitter
SWR Meter
Z Match Tuner
Line pair
(TV open line or, at 3.5 MHz, figure 8 power flex might be used with low loss.)
Coil 33 turns on a 110 mm diameter former, tapped at 9 turns, close wound with 1 sq mm PVC covered stranded wire
Total inductance approx 85 uH to resonate with plate capacitance at 3.5 MHz.
© WIA AR06036_4 Drawn by VK3BR

Figure 4

Figure 4 – Reverse feed with 80 metre terminal unit (function is to encourage out-of-balance line current).

WIA
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to be held in
PARKES
Sat 5 May
Visit
"The Dish"

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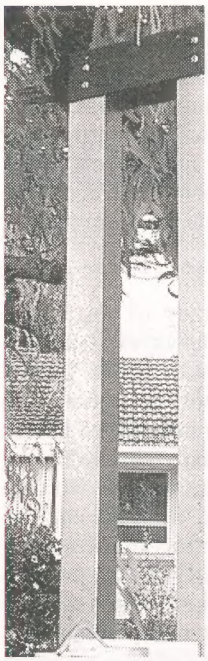

Figure 5 - 80 Metre terminal unit.

Summary

Here is an interesting idea to get high current running at the top of an antenna wire by feeding the signal to the top and exaggerating an out-of-balance condition at the top using capacitance plates resonated with a high Q coil.

If you have been reading my recent articles on experiments with the EH antenna (which has an unbalanced resonant termination), and the unbalanced version of my X3 antennas, you will realise I believe they are relying on the phenomenon I have just described for their good performance rather than the claimed crossed field theory.

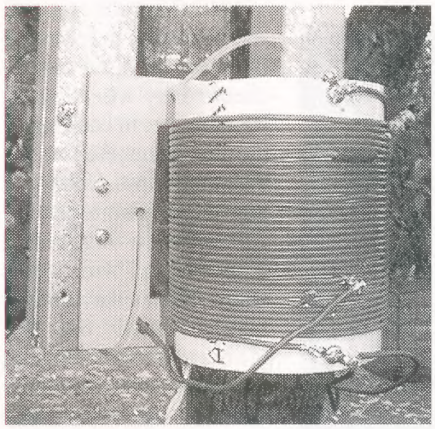

Figure 6 - Coil of 80 metre terminal unit.

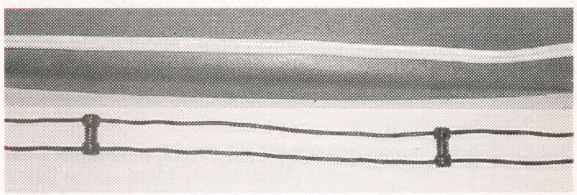

Figure 7 - Open wire TV type line and Figure 8 power flex

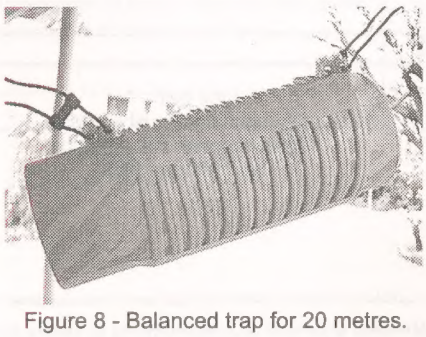

Figure 8 - Balanced trap for 20 metres.

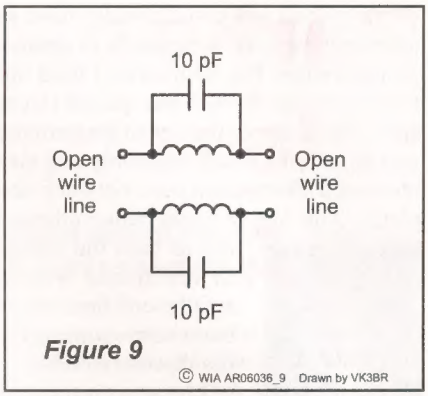

Figure 9 - Balanced trap for 20 metres. 13 turns of "Figure of 8" power flex, spaced to 11 cm. Former - 4 cm diameter. Inductance 6.5 µH. Parallel resonant at 14 MHz (tuned with 2 x 10 pF capacitors).

There is plenty of room for more experimentation in the best design of a terminal unit to produce the out-of-balance current condition down the feed line legs. If I were a Broadcast Station engineer, I would be interested to see whether the system I have described would generate higher field strength than some of the well established top loading antenna systems now used.

Some interesting references

(1) The VK5BR-X Antennas. Some modified ideas on how they work. By Lloyd Butler VK5BR - Amateur Radio, April 2006

(2) Some Different ideas on the EH Antenna. By Lloyd Butler VK5BR - Amateur Radio, June 2006. Also refer to http://www.qsl.net/vk5br/EHAntennaFurtherTests.htm.

(3) http://www.qsl.net/vk5br/NewX2_X3.htm - The VK5BR X2-X3 Small Dipole Antennas.

(4) http://www.qsl.net/vk5br/X3UExperiment.htm - Some interesting results in operating the X3 out of balance

(5) http://www.qsl.net/vk5br/Lo_Key_EH_X3.htm - EH & X3 Antennas (As published in QRP Club Journal "LoKey").

Parkes – the radio telescope and the WIA AGM

Robert Broomhead VK3KRB

The third Annual General Meeting of the WIA will be held on Saturday 5th May in Parkes, NSW. Until this year, each AGM of the WIA has been held in a capital city location. However in 2007 we are engaging our regional members to be hosts for the AGM and for what will be a very exciting weekend for radio amateurs Australia wide joining together to meet in the NSW country town of Parkes.

Why Parkes ?

After the 2006 AGM, the WIA Board of Directors discussed options for the 2007 AGM. The directors and in particular the then Secretary, the late Chris Jones VK2ZDD, expressed enthusiasm for incorporating the AGM into a weekend of activities of particular interest to radio amateurs. A subcommittee was elected comprising Phil Wait VK2DKN and the writer, assisted by the Secretary. We were charged with selecting a venue and planning the weekend. It took quite a bit of work, but after much discussion and consultation, we decided to have the event at Parkes NSW.

Parkes is the home of the CSIRO's Radio Telescope, affectionately known as "The Dish", after a movie of the same name. Parkes is a strategic location for the Radio Telescope as it is distant from other major population areas and provides the necessary quiet RF location for Radio Astronomy. The Dish is just 20 kilometres down the road from the Parkes town centre.

The weekend activities will commence Friday evening, the 4th, and run through to midday Sunday 6th May.

Friday 4th – kick off with a good "Dish"!

Activities kick off at 6:30 pm with a light meal at "The Dish Cafe" located at the Radio Telescope site. Cafe manager Craig Smith has an reputation for some of the district's finest meals, all at very reasonable rates. After the meal we will join with the local Central West Astronomical Society (CWAS) for their Friday club meeting and presentation being held in the Visitors' Centre theatrette at the Telescope Site. Following this meeting, CWAS will have a number of telescopes set up on the lawn outside the Visitors' Centre and will invite us to join them in looking at some distant planets and stars.

Saturday 5th – formalities, food, and more of "The Dish"

Saturday sees an informal start to the day, with breakfast at the Coachman Motel. Over the course of the morning folk will be arriving from interstate, so a Meet and Greet barbeque lunch has been organised at Kelly Reserve (Bushman's Dam). This will be an ideal opportunity for a chat and to catch up with those folk who have just arrived. The WIA will be providing catering at the BBQ for just $10 per head.

The formal part of the weekend commences Saturday afternoon at 2.00 pm, with the WIA AGM, which is being held at the Parkes Leagues Club, 194 Clarinda Street, Parkes. The AGM will be followed by the Open Forum, where reports on amateur radio activities over the year will be presented and members are encouraged to raise any issue they wish. The Open Forum is expected to conclude at 5:00 pm. The Parkes Leagues Club is a short distance from the railway station, close to the city centre.

The WIA Annual Dinner will commence at 6.30 pm Saturday evening at the Coachman Hotel, Welcome Street Parkes, just a short walk from the AGM venue. A set dinner will be available at $35 per head (not including drinks) and dress for the evening will be smart casual.

Please advise the WIA office when making your booking if you have any particular dietary requirements.

There will be a late night screening of the movie classic "The Dish" after the

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AGM dinner at the Coachman Hotel. Management have agreed to keep the bar open for those who may enjoy a night cap or two.

Sunday 6th – a first hand look at the inside workings

The CSIRO Radio Telescope or "The Dish" has become one of the world's most active and productive Radio Telescopes, performing radio measurements and collecting scientific research data.

Because it is a working research instrument, it is normally closed to the public. The WIA are grateful to the CSIRO Radio Telescope management for providing WIA members and their partners the unique opportunity to participate in a series of "technical" tours through the Telescope facility.

You will be able to see first hand the inside workings of the Radio Telescope as well as being able to ask any questions of the site engineers. This will likely be a once in a lifetime opportunity for most amateurs to step inside and see the inner workings of one of world's most powerful and active Radio Telescopes.

Where to stay

Enthusiasm for the weekend has already outstripped our expectations, at the time of writing all rooms at the Coachman Motel have been booked and other motels in and around Parkes are quickly filling. To assist you in making your accommodation arrangements, we have included below contact numbers for a range of places offering accommodation in Parkes. If in doubt we would suggest you contact the Parkes Visitors centre on 02 6863 8860 or free call 1800 624 365 to obtain more information on the various accommodation options available.

Parkes Accommodation in alphabetical order:

All Settlers Motor Inn	(02) 6862 2022
Bushmans Motor Inn	(02) 6862 2199
Cambridge Hotel	(02) 6862 2098
Coachman Hotel/ Motel	(02) 6862 2622
Comfort Inn Parkes International	(02) 6863 4333
Commercial Hotel	(02) 6862 1526
Court Street Motel	(02) 6862 3844
Grand Hotel	(02) 6862 1003
Hamilton's Henry Parkes Motor Inn	(02) 6862 4644
Moonraker Motor Inn	(02) 6862 2355

Don't Miss Out – Reserve Your Spot Today!

Come and join in the excitement of the 2007 AGM and weekend activities. It is vital we know you are coming so we can reserve your place and send you further information. If you haven't already done so, please take a moment to complete the registration form included in last month's AR (the registration sheet was included in the mailed copies as an insert). Or alternately you can download a copy from the WIA website at http://www.wia.org.au/ Please fill it out and fax or mail the form to the WIA office.

ar

Please note:

- **The tour involves steep steps and is unsuitable for people with an aversion to heights.**
- **For safety reasons people of limited mobility, including toddlers and babies needing to be carried, will only be able to do part of the tour.**
- **For safety reasons appropriate (enclosed) footwear MUST be worn during the tour. Thongs, other open footwear such as sandals, high heels and bare feet are not acceptable. Visitors without suitable footwear will not be able to take the tour.**

The Film, "The Dish": Fact versus Fiction

(Refer to "Parkes: 30 Years of Radio Astronomy" available through Visitors Centre, $30).

Several true things in the film:

- we did point at the Moon, and, as arranged, did take signals, and successfully, for the moonwalks
- we normally 'park' our dish at wind speeds above 35 km/hr. On the day of the moonwalk it was gusting 100 km/hr.
- Goldstone (USA) signals did "disappear into the ground" on the day
- there is a visitors' centre nearby
- staff do take "hayrides" as one means to get equipment up onto the dish
- Parkes did use an "off-axis" feed to acquire signals of the first few minutes
- the astronauts did go outside ahead of schedule
- we do have a UPS and backup diesel generator
- NASA did get coordinates wrong occasionally on very early missions
- the control room set and operation of the dish was a very realistic representation of 1969

See pictures of "The Dish" inside the back cover

Pure fictions (to make a good story)

- there was no power failure
- there was no animosity with Americans; we are accustomed to sharing expertise
- the Prime Minister visited Honeysuckle Creek, not Parkes
- Director, John Bolton died in 1993; Letty Bolton lives in Queensland and visits occasionally

Understated/overlooked aspects

- the first few minutes of the televised broadcast originated from Honeysuckle Creek, near Canberra
- more NASA staff and OTC (Telecom) staff were present; it was a larger team effort
- the congratulatory telegram included a lot more players than just Parkes
- quality control and foresight at Parkes were much greater than portrayed. The Director had actually calculated how fast teams of men could wind the electric motors in the event of a total power failure.
- it was quite normal to scan side to side to find a source and strongest signal
- the wind kept blowing a gale during the moonwalks
- our then Director, John G Bolton, made the decision to keep pointing in the wind. In this universe he got away with it!
- Parkes Radio Telescope is ten thousand times more sensitive than when first commissioned in 1961. No time is wasted on the dish, one the best radio telescopes in the world.

Puzzling aspects

- Prime Ministerial ignorance (we were well known — half the construction funds were from the Commonwealth Government)
- as big as a football field (it is big, but not that big; what footy field is that small?)

Cricket on the Dish

- It never happened. True, the actors went up there for about an hour, but they were told where they could stand, what they could do, what they could throw (a tennis ball). It wasn't a "stunt-double" dish; it really was the Parkes dish they were standing on, but neither was what the film showed "highlights of a day's play"!

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Beware of unrecognised and undetected loss!

Felix Scerri VK4FUQ

I have to admit that I was thinking of the title of the great George Harrison song, "Beware of Darkness" when thinking of a title for this article and I couldn't think of anything more accurate or descriptive! I've had some interesting experiences of late, where a totally unrecognised fault that occurred on a VHF antenna system had resulted in a large and unexplained additional loss and some very strange fault symptoms.

Eventually the fault was found and corrected, and the result is an antenna system now working to full capacity. As with so many 'life experiences', some luck was involved, but the whole experience goes to show that serious fault conditions (especially involving RF) can occur through strange means, and 'eternal vigilance' is needed. As many of these kinds of faults develop slowly with extended time, on many occasions the true severity of the fault is not recognised until very late in the piece! A factor that had muddied the situation in my own case was a tendency to 'chop and change' things around a lot at this QTH. This serves to produce a lot of general uncertainty into the equation, and sometimes other real faults often compound things further!

The story

Over some months, I had noticed generally deteriorating performance with my 2 m antenna system. This was put down to several things, such as lossy feedline, corroded antenna connections, varying weather, and propagation conditions, etc, etc. The interesting thing was that all of these things did indeed play a part in proceedings!

Swapping antennas for test purposes periodically added to the general confusion. However, things had become more standardised of late and the other faults detected were rectified. However, regardless of that, the antenna just did not appear to be working as well as hoped. I merely concluded that limitations in my antenna system were being exposed, as the Yagi antenna itself and feedline were tested at 100% OK. There was really nothing else in the system that could be affecting general performance. Or was there?

Actually, indeed there was: A high quality (and trusted) SWR meter and short patch cord used for general monitoring of SWR and power output, etc here in the shack.

Another one of the strange symptoms I'd noticed was the increasing presence of many "intermods", spread right across the 2 m band. These intermods were painful, as they popped up seemingly everywhere, making scanning a very tortuous exercise! One day I chanced to brush my hand against one of the PL259 connectors on my SWR meter. The shell felt a little "loose". This seemed promising, so I unplugged all the connectors, thoroughly cleaned all contacts and then reattached them. A few tests seemed to indicate some improvement; however, all of the intermods, which I had blamed on nearby paging installations, were still there.

A little later on, in a moment of inspiration, I decided to take the SWR meter and patch cord completely out of circuit and connect the antenna feedline directly into the 2 m rig. To be honest, I did not really expect any difference. However, after putting the rig 'on scan' and listening for a while I realised that most of the intermods were gone!

Shortly after, I gave a call on our local repeater and asked for a signal report. I was told, "loud and clear". This was a genuine surprise, as on previous occasions my signal was uniformly "readable but noisy". I sat there somewhat stunned as I couldn't quite believe the implications of this signal report. Either my SWR meter and/or the patch cord were the cause of all that I had noted. Something was introducing a lot of additional loss and/or non-linearity into the transmit and receive path.

I have since thoroughly tested both the SWR meter and patch cord and both test 100% OK. Yet, when patched back into circuit, all the problems return! Something is clearly amiss, but to be perfectly honest, I don't feel inclined to do any more investigation. The easy solution is to just leave the SWR meter and patch cord completely out of circuit unless needed.

As SWR meters invariably contain "sampling" diodes, the SWR meter is the prime suspect, but once again its performance has been tested 100% OK. Likewise the patch cord is apparently free of faults.

Yes, it's an ongoing mystery, but these strange things do happen at RF sometimes! I have read of documented accounts of strange harmonic production and interference attributed to similar sources, so perhaps this incident is not that unusual, all things considered. Yes, it pays to be 'eternally vigilant'!

ar

Over to You - Kits

Dr Bernardo León de la Barra

We would like to use radio platforms/ kits to encourage school students to study science, engineering and technology. Having read AR Vol 75, No 3, it was very difficult to find any kits under $50.

Do you know of any kits that cost less than $50? I am new to this area and would appreciate your advice on this issue.

Thanks very much for your assistance.
Regards, Bernardo,

Dr Bernardo León de la Barra
School of Engineering
University of Tasmania
Private Bag 65 Hobart TAS 7001
email: b.a.leondelabarra@ieee.org

Editor's comment: *I am sure that there are others wishing to access low cost kits for radio projects to use to encourage and/or attract newcomers to our hobby. If you know of suitable kits, please respond to Dr León de la Barra, with a copy to me, – I would be happy to collate suggestions into an article.*

If you have ideas for projects that fit these criteria, please forward them to the Secretary of the Publications Committee. We will work with you to polish any submission into an article for publication. ar

A DRM down-converter for 455 kHz IF receivers

John Titmuss VK4JWT

DRM, which stands for Digital Radio Mondial, is the only universal, open standard, digital AM radio system with near-FM quality sound available to markets worldwide.

The quality of DRM audio is excellent, and the improvement upon analogue AM is immediately noticeable. DRM can be used for a range of audio content, including multi-lingual speech and music.

Besides providing near-FM quality audio, the DRM system has the capacity to integrate data and text. This additional content can be displayed on DRM receivers to enhance the listening experience.

Unlike digital systems that require a new frequency allocation, DRM uses existing AM broadcast frequency bands. The DRM signal is designed to fit in with the existing AM broadcast band plan, based on signals of 9 kHz or 10 kHz bandwidth. It has modes requiring as little as 4.5 kHz or 5 kHz bandwidth, plus modes that can take advantage of wider bandwidths, such as 18 kHz or 20 kHz.

This project came about due to my interest in a new form of radio transmission called DRM. This is a new form of digital

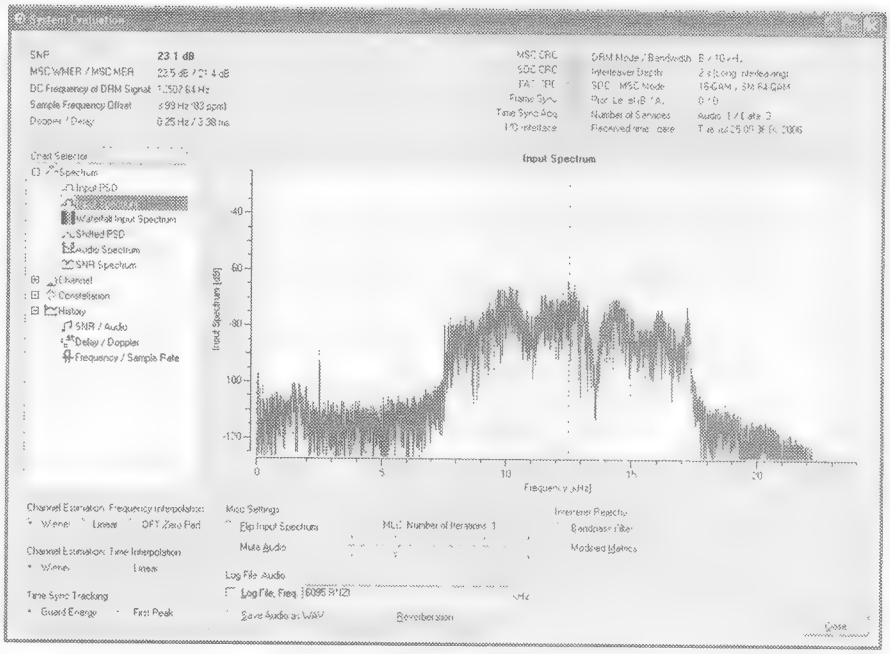

Fig 2 - RNZI being received on 6,095 kHz.

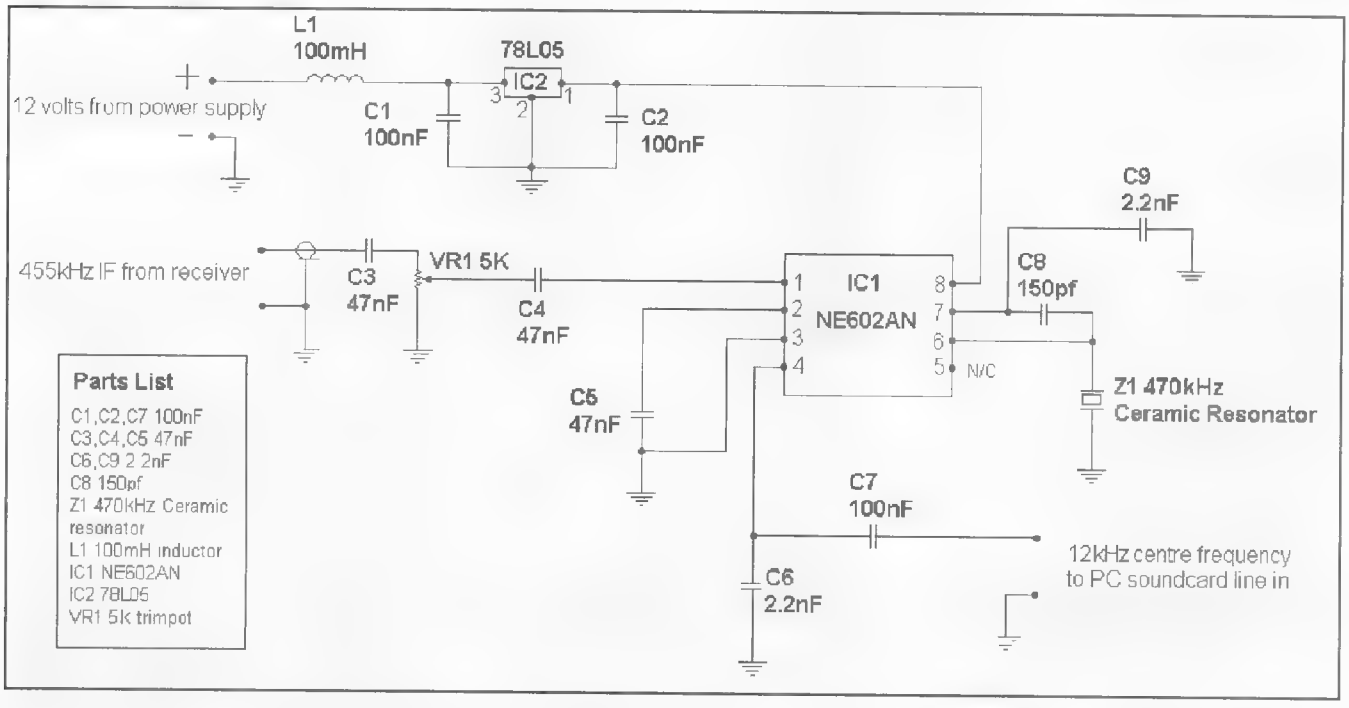

Fig 1 - Circuit of the DRM down-converter for 455 kHz IF receivers

short wave transmission. A few devices were available from Europe for decoding the digital signals, but the price was high. I decided to modify an existing circuit, using a stable purpose-built 470 kHz ceramic resonator as the oscillator, instead of the original unstable L/C circuit.

How it works

The 455 kHz IF signal is fed into the input (pin 1) of IC1 through a variable resistor VR1. The output to a PC sound card is taken from pin 4 of IC1 through a DC isolating capacitor C7. With C8 set to 150 pF, the oscillator frequency should be around 467.5 kHz. You can check if the oscillator is working by putting it near a receiver tuned to 467 kHz. You should hear a beat frequency.

The IF signal of 455 kHz is mixed with 467 kHz, giving an output of 467 – 455 = 12 kHz centre frequency. Since the DRM signal is 10 kHz wide, the sound card should have no trouble sampling this frequency. I have found a number of software defined radio applications also work well with this converter. All the demodulation for SSB, AM, and FM, is done in software, as well as providing DSP functions.

If all is well, connect your 455 kHz IF to the input, and your computer sound card to the output. Run the Dream software, and tune to 6,095 kHz (RNZI), or 1,440 kHz (SBS). You should see the Dream software lock onto the DRM transmission, and audio should start playing from the computer speakers.

The NE602AN oscillator/mixer and 470 kHz resonator are available from me at a cost of $12.50. You can pay via Paypal, or email me for payment information at jwtitmus@bigpond.com. I can also supply a CD with various software defined receivers, as well as the latest Dream software decoder.

Silent keys

Raymond Nelson Fry VK2FRY

Raymond Nelson Fry VK2FRY, became a silent key on Friday, 19 January, 2007.

Ray leaves behind his wife, Marjorie, children Alex, Ian, and Megan, and lots of grand-children.

He was born on 21 October, 1917 at Crows Nest, Sydney. That day was Trafalgar Day - thence the name Nelson, which he hated!

Ray served in WW11 as an electrical fitter. He tried to enlist, but was knocked back because his was an essential service. Later he became an electrical contractor.

He became an amateur in 1983, firstly as a novice, VK2NOI, upgrading to VK2YRF (the reverse of FRY) and finally VK2FRY. All these upgrades happened in 1983.

Apart from amateur radio (which means Hornsby and Gladesville Clubs now are missing a quiet, gentlemanly member), he was involved in boats (home-made speedboats), cars (restoration), coins (through the Metropolitan Coin Club), firearms (the Antique Arms Society and St Ives Pistol Club), flying (Ultralight Flying Club), Models (Miniature Modellers' Club), spearfishing (NSW Spearfishing Association) and the local Probus and Rotary Clubs.

Don't ask me how he managed to fit all those into his less than 90 years!

My memories of Ray go like this - the phone rings - "Hey Bob, I got ..... at a junk sale. If I bring it round, can you show me how it works?" After consultation - "It could be handy, but I got half a dozen of them - would you like a couple?"

Vale Ray - VK2FRY

Submitted by Bob Yorston VK2CAN, with assistance from Jo Harris VK2KAA.

Dick Crawley ZL2AQR

Dick (Richard) Crawley ZL2AQR fell silent at 11.30 AM New Zealand time on 26 February 2007, after a brief struggle with cancer.

Dick had been an amateur radio operator for over fifty years in New Zealand, with many contacts into Australia and to the rest of the world.

A SMIRK member, number 4666, Dick was very active on the six and eighty metre bands in particular.

Dick is to be cremated and his ashes interred in the family plot in Hastings on a date to be confirmed.

Condolences can be sent to Jean, c/o Judy Albrey, 43 Ruahina Road, Te Kauwhata. New Zealand.

Submitted by Peter Crawley.

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160 metre noise cancelling

Mick Hort VK2BZE
vk2bze@exemail.com.au

Having played with various noise-cancelling circuits published in Amateur Radio and other media, it became obvious that most of them were of the "it worked for me" kind but repeatable results were very hard to obtain. In my experience, some results on some nights were very good, but the next night they were very poor.

I had mainly been mixing my noise at the antenna socket of the rig using potentiometers to trim the levels, and amplifying my noise signal with a two-stage FET amplifier and a parallel tuned LC resonant circuit for phase shifting. But using these techniques, impedances varied greatly, making balancing difficult.

Noise antennas with good all-round performance also proved very difficult to find. After much experimenting, a few things became obvious. I needed an antenna that would accurately reproduce the noise source as seen by the main antenna. A length of wire thrown over the fence was next to useless, as cancelling needs to be done under constant conditions to be repeatable. All the basic concepts I had been following were valid but the implementation needed refining. The result described here is not so much a cancelling box but a cancelling system.

Loop antenna

My noise antenna (Figure 2) is a two-turn shielded loop made of 75 ohm TV-type RG6 coax, and resonated with 40 to 80 pF of capacity. It is very similar to the single-turn loop published widely but the 75 ohm coax has lower capacity and needs two turns. This antenna is used to feed a long length of 75 ohm coax, so I have included a toroidal step-up transformer to avoid loading the loop. A FET preamp would probably be better but I have sufficient gain in the noise-cancelling box to make up for feeder losses. The loop is on the shed roof and can be rotated remotely as described later. Once resonant, it should give a broad lobe in line with the loop sides, and a sharp null side-on to the loop; so it can be used to pick up a noise for cancelling, or to null a noise if needed.

Noise cancelling box

The cancelling circuit (Figure 1) starts at the noise antenna end with an impedance step-up from the coax to a high impedance to feed into the phasing resonant circuits. The input winding to the toroid has a grounded centre-tap to give a 180 degrees phase reversal facility. The phasing circuit gives about 45 degrees of phase shift, which can be reversed with the phasing switch. The two parallel-tuned circuits are coupled together mainly by stray capacitance, which I estimate to be about 20 pF, and the

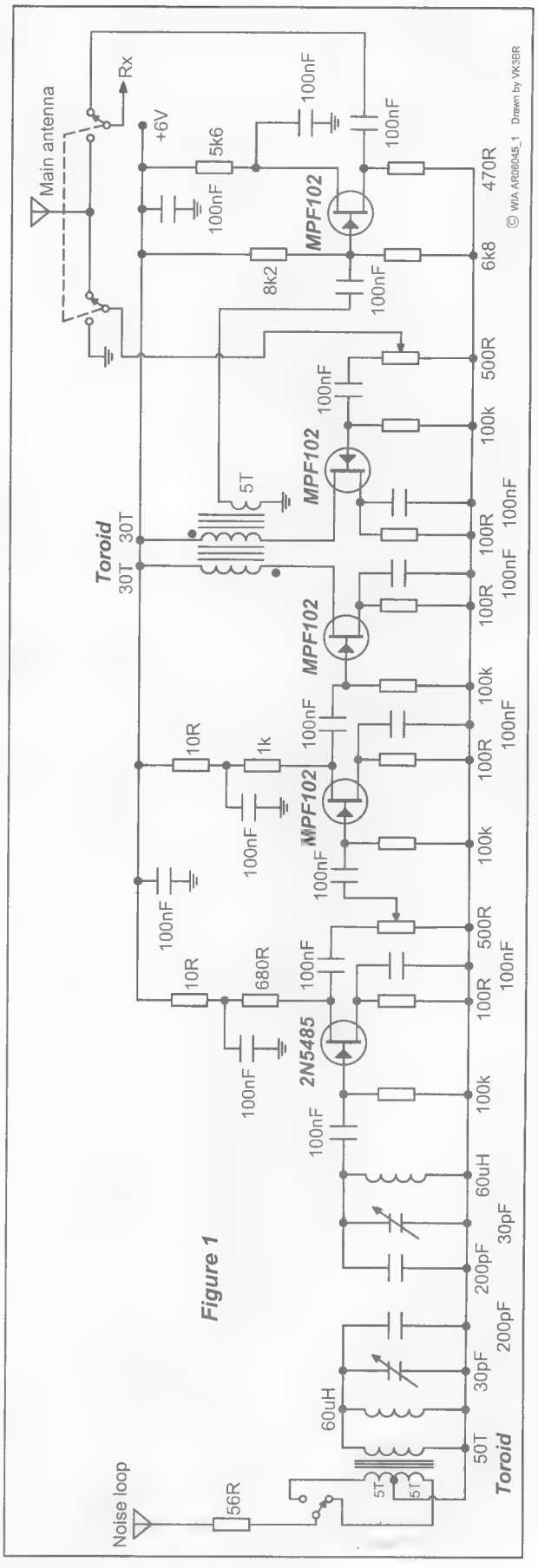

Fig 1 – Circuit of the noise cancelling system.

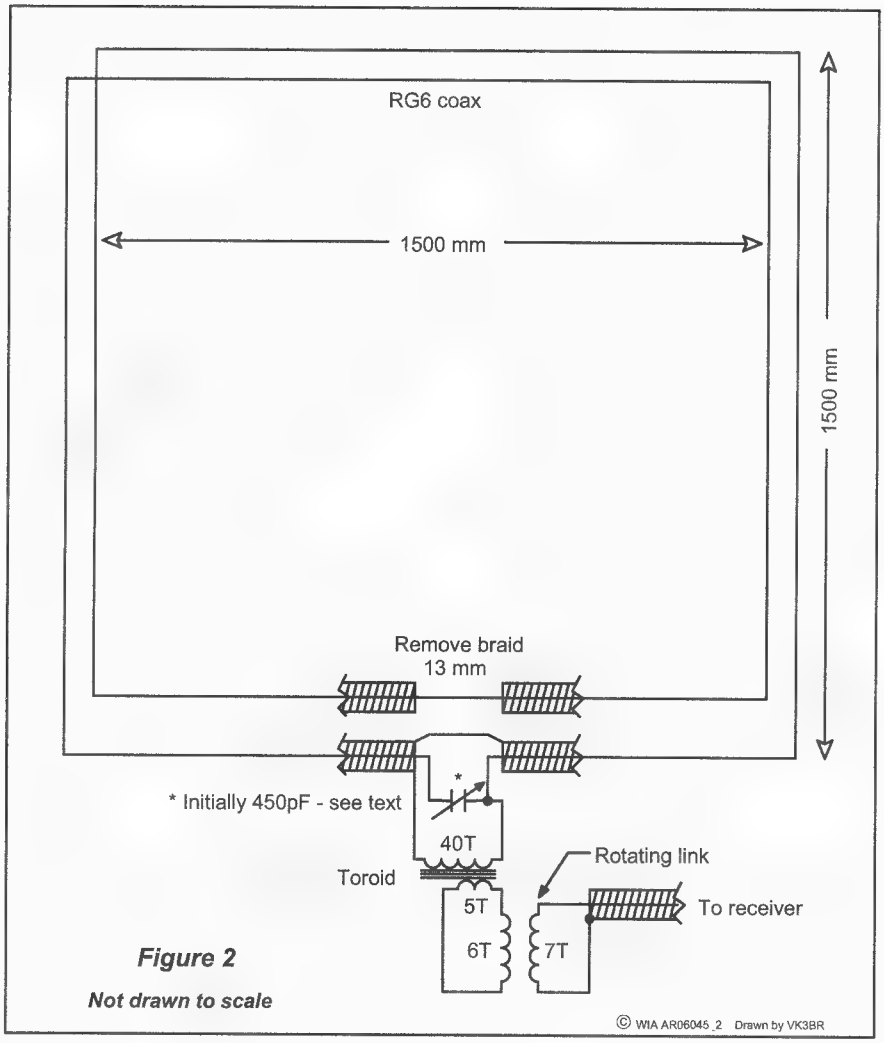

Fig 2 – Schematic of the noise pick-up loop.

resultant selectivity is very sharp.

Next, two stages of FET amplification, with gain control, prepare the noise signal for application to the balancing amplifier. The latter consists of two FETs whose drain loads are two equal windings on a toroid. These windings are connected in anti-phase, so that if the same signal is applied to both FETs no output is produced. The second input to the balancing amplifier is from the main antenna, applied through a potentiometer to control its level.

The toroid transformer in the balancing amplifier circuit has a third winding to couple any unbalanced signal forward to the emitter follower, which provides a low-impedance feed to the main receiver. The noise-cancelling box can be by-passed with the switch shown in Figure 1. Not shown, but also in the box, is the transmit/receive relay. This has good-sized, well-spaced contacts and works up to 300 watts or so with no problems.

Setting up

To set up and test the unit, I used a signal generator to put a low level 1.8 MHz signal into the noise antenna socket and tuned for resonance. One trace of my CRO displayed the input signal and the other trace the emitter follower output (to the receiver), and these two levels were adjusted with the potentiometers to be equal. I then used the input signal as the time base to display the output signal on the CRO. This gave a Lissajous pattern which will vary from a near circle to a 45 degree line as you tune through resonance. The two extra trimming capacitors can now be fine-tuned to give the greatest angle and flattest trace, where the two sides merge into one (zero or 180 degrees phase difference).

Finally, I applied the same test signal to both the noise antenna and the main antenna inputs. By adjusting the two level potentiometers, the output signal to the receiver should be reducible to a very low level (optimum cancellation).

Construction

The layout for the PCB was drawn with a permanent marker pen, using a straight-line layout just like the schematic circuit, and then etched with ammonium persulphate. To keep the etchant hot, put it in the microwave for 25 seconds or so. As it cools take it out and agitate it again. Repeat the process until the PCB is etched. Prior to etching, allow the pen ink to dry overnight for best results.

The unit was made from my junk box, the only parts purchased being the FETs. So it is not overly critical to get going. The two toroids are darkish green, about 25 mm in diameter and were recovered from old power supplies; using a signal generator and CRO to test their suitability. They are not critical and any toroid suitable for transformer service at 1.8 MHz will do.

Transmit/receive switching is done by a relay (in the noise-cancelling box) driven from the main PTT circuit, via another relay supplying 12 volts from the rig. This will vary from rig to rig so you will need to work out what suits your radio. The box runs from a 6 volt NiCad battery using a plug-pack to charge it, so that it can be removed from the mains if noise is coming in via the earth. Running on more than 6 volts causes a rapid rise in amplifier noise for not much extra output.

Loop antenna construction

The loop (Figure 2) is two turns of RG6 TV coax, approximately 1.5 metres per side, with a short break (about 13 mm) in the braid at mid point. At the feed-point, the two inner conductors are bridged by a capacitor. I initially used a 450 pF variable capacitor to find the resonant point then measured it and then replaced it with a ceramic capacitor of the correct value. The braids are connected together and to one side of the 40 turn toroid winding. The other side is connected to one of the coax inner conductors. The toroid is the same as that used in the noise amplifier in the box.

If you want to rotate the antenna remotely, you will need to either install limit switches to avoid tangling the feeder or, as I did, use an inductive coupling. There is more than enough signal coupled across this link to operate the noise

continued next page

amplifier, and the loop antenna can now be rotated without fouling up the coax.

The primary winding of my coupling system consists of 6 turns wound on a former about 60 mm in diameter, which is fitted over the rotating support pole. It is fed by the toroid output (5 turns). The secondary comprises a 7-turn winding with a diameter which gives a little clearance over the primary when they are mounted one over the other. The secondary is connected to the coax feeder going to the noise antenna input on the box back at the shack.

I covered the primary winding with a protective layer of PET bottle plastic and smeared it with Vaseline. The outside coil (secondary) is wound with 2 mm ECW using no former, and is held in shape with hot-melt glue. I mounted it, self-supported by the wires, off the side of a post comprising about 450 mm of 13 mm plastic conduit. This arrangement is flexible enough to accommodate any eccentric movement of the mast.

Operation

In use at my location, I point the end of the loop to the noise source and peak on resonance. I then adjust the noise level from the main antenna (a helical vertical) to about S5 and turn up the noise antenna gain slowly, looking for a dip on the S meter. Depending upon which end of the loop you pointed to the noise source, you may need to flip the reversing switch. Now adjust the phasing capacitor and noise potentiometer for minimum noise by ear or meter. Using fast AGC is best. The noise and main antenna potentiometers give you a mixer type operation so you can use either antenna in several combinations. With a bit of practice, you will find it quite easy and repeatable. If you move frequency, only slight readjustment will be needed.

In operation, it reduces my noise level by up to six S-points. Signals that are in the noise and unreadable become Q5. It is also good for removing birdies. Once the noise-canceller is working, I find DSP reduces the noise to a comfortable level to listen to, whereas before cancelling it is next to useless.

Results

The need for all this came about because of an S9 noise on 160 metres caused by problems related to local commercial radio transmissions, which are yet to be ascertained, and hopefully, fixed. I could not work amateur stations through this noise unless they had S9+ signals.

However, with my noise cancelling system in use, I am now working ZL and I even worked a VK5 running 7 watts QRP. I was also able, with the aid of the MFJ DSP box, to work a Melbourne station running only 2 watts. The system does not give me access to the really weak stations but it has improved things a great deal.

If you have any queries, please email me.

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A function generator

Dale Hughes VK2DSH

Along with various power supplies, an oscilloscope and a DVM, the next most useful item of test equipment is a signal generator. This design generates sine, triangle and square waves between 0.3 Hz and 50 kHz in five overlapping ranges, which is useful for testing amplifiers, data acquisition systems, transducers, and so on.

The design is quite simple and can be built in a few hours. This circuit is based upon a design that was first published many years ago in the Radio Handbook by Orr (1), and it has been modified to suit my particular needs and the components I had available. The function generator chip can run as fast as 300 kHz if required, and the circuit components can be altered to achieve this higher frequency. The Intersil application note (2) describing the ICL8038 should be consulted in this case.

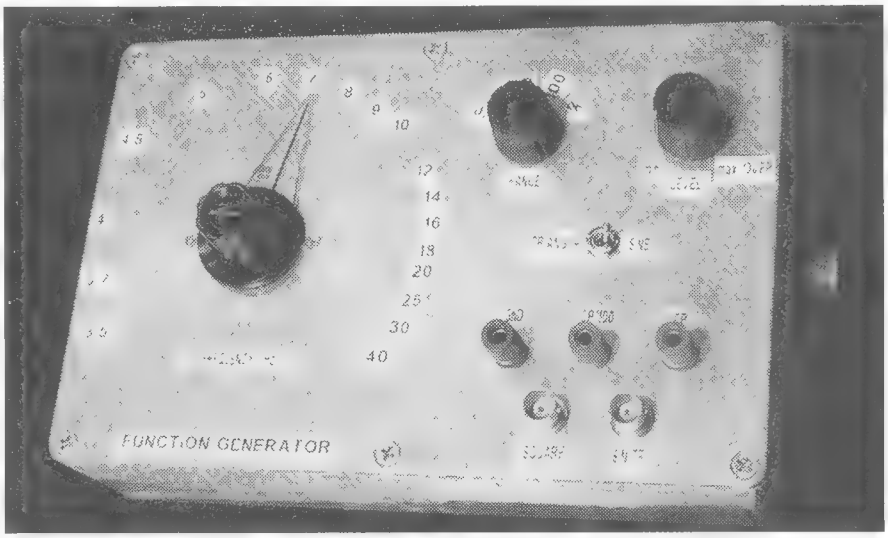

Fig 2 - The completed unit.

Circuit description and construction

The circuit is built around a function generator IC, the Intersil ICL8038. This chip provides sine, triangle and square wave outputs. The chip is now quite old, but appears to be still readily available; and there are probably quite a few of them lurking in 'junk boxes' around the place!

Sine and triangle wave outputs are switched, then amplified and buffered by an LM627 operational amplifier and LH0002 buffer. This combination provides a low impedance output of up to 10 V peak-to-peak with a maximum continuous output current rating of 100 mA. A separate 100:1 voltage divider is used to generate an attenuated output signal for testing low level circuits. The square wave output is level shifted by means of Q1, and the output is approximately at TTL levels (0 to 5 volts). Almost any PNP small signal transistor will work in this position.

As I needed the device to be portable, the unit is powered by two 6 volt gel-cells and charging terminals are provided so that the cells can be charged in series from a 13.6 volt charging supply. If portability is not required then a suitable 240 VAC mains supply can be easily constructed.

My unit was constructed on 'Vero' board and housed inside a 222 mm x 146 mm x 55 mm die-cast box (Jaycar HB-5050). The usual 'Vero' board construction technique was modified by using self-adhesive copper tape (the sort used in glass lead-lighting) to make a ground-plane on the component side of the board. All ground connections were made to the tape.

To make setting the output frequency easier, I fitted a 6:1 reduction drive on the potentiometer shaft. For convenience, output signals are made available on both BNC connectors and terminal posts.

Adjustments

A number of adjustments are required before using the function generator:

- Set VR1, VR2 and VR3 to mid scale and the range switch to the x100 position. Observe the triangle wave output on an oscilloscope and adjust VR2 for the most symmetrical waveform.
- Switch to the sine wave output and adjust VR3 for minimum distortion on the sine wave signal.
- Adjust VR4 and VR5 to match the sine and triangle wave amplitudes, so that the amplitudes are the same for both outputs.

Following the above adjustments, the frequency scale should be calibrated using a suitable frequency meter. The output level control can also be calibrated if required.

Parts availability

The integrated circuits used in this design are (at July 2006) available from Futurlec Electronics, see www.futurlec.com for details.

Operational amplifier IC2 could be replaced by different types of devices, for example an OP27 or even a 741 type if all else fails.

If the final buffer (IC3) is unobtainable, it can be replaced by an Intersil HA3-5002-5 (3) (Farnell part number 406-170) which is marketed as an enhanced LH0002 type buffer. Note, however, that the pin-out of this device is different to the LH0002. If a low impedance output capability is not required, the buffer can be deleted and the output taken directly from IC2. In this case, the output current would be much less.

References

(1) Radio Handbook, 21st ed. W. I. Orr, W6SAI. Editors and Engineers, 1978.

(2) AN013.1 Everything You Always Wanted to Know About the ICL8038. November 1996. http://www.intersil.com/data/an/an013.pdf

(3) Intersil HA-5002 Data Sheet, document FN2921.11. March 2006. http://www.intersil.com/data/fn/fn2921.pdf

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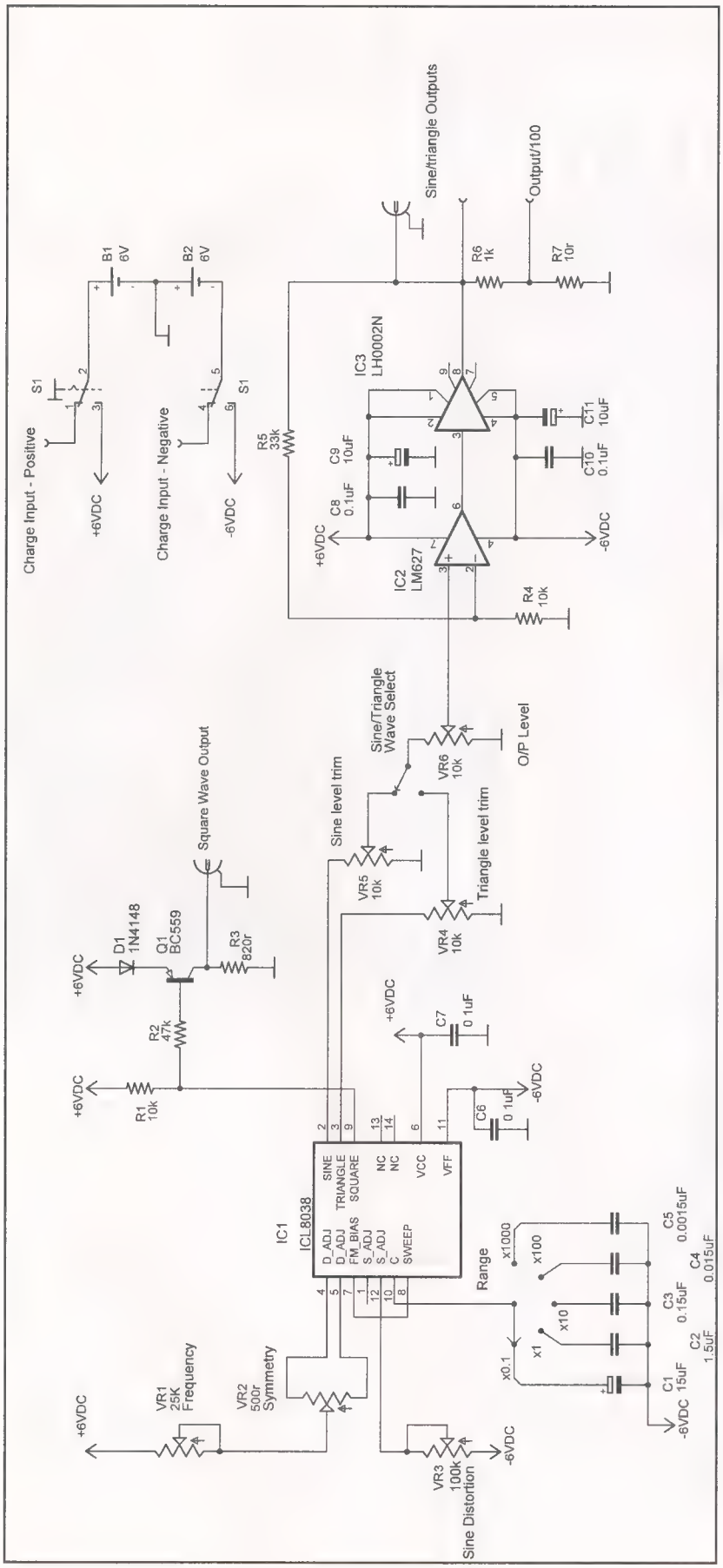

Fig 1 – Schematic of the function generator.

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Sexy Socks – amateur radio retail style

Michael Ampt VK3CH

Retail trading has always involved long hours with often quiet times during the day. I found myself back in the retail game after one of the Sock Stands to which my wife supplied stock became available for sale in a quick way. As my wife is busy with her own work, the task of running the stand fell to yours truly.

The shopping centre is smaller than a city one, being a local plaza strip, and located 23 km north of the city.

After a while, and some planning, it was decided that some 'company' was needed to help pass the long retail hours in between customers. Amateur radio to the rescue!

After a few days, I was ready to do some 'covert' installation of some gear. I settled on 2 and 70 cm FM and 23 cm FM as the easiest to get going.

An IC-2720H (2 m and 70 cm) and TM 541A (23 cm) with power supply were installed into a space inside the stand, and coax run underneath the mat on the floor. For an antenna I tried a ground independent mobile mounted on top of a stock display unit. Soldering connectors to the coax was a risky job – as right smack above me was a smoke detector! Not to mention a security camera! I was soldering the connection while blowing air over it, almost cooling the solder as I joined it all up – all while attending to customers as they peered into the stand wondering what I was up to!

The alarms never sounded and no fire trucks turned up!

Signals received with the mobile antenna were disappointing so it was time to get a bit more adventurous. I changed the mobile whip for a Diamond X-300. Most repeaters came up 3 – 5 "S" points better on the X-300 vertical compared to the mobile whip.

A Diamond U-5000 was used solely for the 23 cm transceiver. That way each radio has its own antenna, so no coaxial switching was required.

Photo 1 shows the X-300 antenna mounted on top of the display stand. No UV, wind damage or water ingress to worry about for that antenna! No pager hassles out here either.

As you can see, each section of the corridor has these "A" frames that help 'hide' the antenna from the whole length of the corridor, so it's not in view until you are at the stand. Also, with all the stock, it's not really noticeable unless you arelooking up at the roof line.

Some school kids saw me on the microphone and said "are you on CB?"

I could have a chat to a 'local' – or have a chat to my Dad at Horsham, via the Ben Nevis repeater at Ararat on IRLP as well – no one seems to notice the antennas – but I hung a few footy scarves on them to hide them a bit more!

Over the first few days, I had QSOs on 2 m to many Western & Northern Suburbs Amateur Radio Club (WANSARC) club members, including Bob VK3EL (S2), Max VK3ZCW (S2), Bob VK3BU (S7), Ralph VK3FRNB (S4), Mark VK3PI (S9), Harry VK3KBA (S5), and Graeme VK3NE (S4) as some of my first local contacts with this setup, but at times the signals will 'flutter' quite a bit.

Photo 1 - The X-300 antenna mounted on top of the display stand.

On 23cm, the Melbourne City repeater will not key up. In fact, nothing was heard anywhere on this band at first, but that was fixed up later.

Photo 2 shows the radio installation. The radio is in the cupboard, together with the 40 A power supply, with the green digital screen and an extension speaker for a smooth sound. All locks up out of sight at night. Just the radio "heads" are mounted to see frequency display with the units deep inside the cabinet. The antenna coax runs underneath the mat inside the stand area, about a five metre run in all, with the antenna 2 m above the floor level.

So, in between customers, I can QSO simplex to at least 50% of club members from their homes and with other stations via IRLP during "work".

I even heard Grant VK3HFS tell the amateur community via the Vic Link broadcast on Sunday 2nd April about "Sexy Socks on the Air".

One day, as 2 metres was in operation, a person stopped at the stand and asked, "Is that 2 metres? What's your callsign?" After a chat we both realised we had met previously. It was Graeme VK3FTTG, whom I had assessed for the Foundation licence practical at Box Hill many weeks ago and he was now on air. I told him

about our club meeting on Friday. He said he knew and was already going – small world or what! He used to buy his socks from the previous operator of the sock stand!

On Friday, Graeme visited and WANSARC had another new member!

Improving VHF and UHF and adding HF

After dissatisfaction with scratchy signals, it was decided to go the full inside length available, 5 metres. The IC-2720H was kept with the current X-300 and an IC-706 MKIIG brought in as the main rig.

A Diamond X-7000 giving 2 m/70 cm/23 cm at 8.3/11.7/13.7dB gain at 5 metres long was my choice to try out.

That meant the antenna would "sit" above the floor and nearly touched the ceiling inside (only three inches to spare!).

For HF, the AH-4 Automatic Computer Microchip Controlled Tuner was coupled up and feeds a wire under the mat to a chrome tube 4.4 metres high with stock hung off it. The "spinner displays" give a 'capacitance hat' effect and increase the available lower bandwidth.

With the ATU, we are supposed to get 1.8 MHz – 54 MHz with a perfect, proper length, antenna – which I certainly did not have, but I did have a good RF ground available in use.

After installation, the results on VHF and UHF were not as good as expected. They were a bit improved but only marginally, with a lot of variation as I walked about near the antenna.

HF was different – just for fun I tried 160 metres and YES it was there.

In fact, any frequency from 1.8 MHz to 54 MHz was received pretty much interference free, except for a bit of AC buzz most likely coming from the centre lighting. 7.07 MHz received well with interstate contacts coming in S4. But 23cm was still no good.

With VHF and UHF not as good as I hoped; there was only one quest left – get the aerials onto the roof!

Mid April - going 'all the way'

After chatting with centre staff, it was discovered that only three weeks earlier, with new Occupational Health and Safety regulations, they had installed fixed ladders to all sections of the centre roof. A quick walk on the shopping centre roof found that cables would fit neatly through the air ventilation along the glass roof top where it met the steel roof top. All this with a wall top edge only six metres away, just perfect for mounting antennas, with no obstructions to the city CBD direction.

Photo 2 - Semi-concealed radio installation.

I was tempted to create another antenna farm, like at home, but I decided I had better not push my luck. I settled on moving the X-7000 to the roof and using a coax switch to go between 23 cm and the IC-706. I also figured I may as well take away the IC-2720H and its indoor antenna. At least this way there would be no EMR concerns and much better signals.

So, arriving early before the shoppers, the X-7000 was mounted on top of the dividing wall securely, with an uninterrupted view of the city in the distance, 23 km away. This task was completed in only 18 minutes! (If you have seen my roof at home, you know I've had a bit of practice!)

The 9913 coax slipped through the gap, with only just enough room for the "N" connector to pass through. It was a 16 metre run, with the antenna about 11 metres high from the ground and four metres above the roof line.

The final results

After running the coax back to the radio, it was time to see the results. Repeater VK3RBY was received at S2; VK3REG at S 7; and Ballarat VK3RBA at S 7, all with NO pager interference heard.

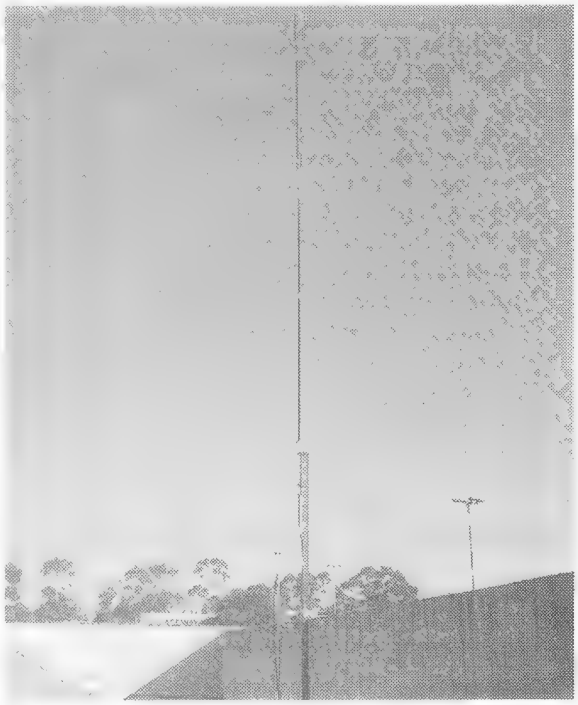

Photo 3 - The antennas on the roof of the plaza.

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Repeaters received at signals of either S9, or many dB over, are: on 2 metres, VK3RML, VK3RLV, VK3RMN, VK3RSR, VK3RGL, VK3RCR, VK3RSG, VK3REC, VK3RWG and VK3RMM.

70 cm saw VK3RMU, VK3RMH, VK3RAD, VK3RSE and VK3RGL, all at S9 or well over.

Putting out a call on 146.450 got me Bob VK3EL returning to say "... aren't you meant to be at work, your audio sounds different, but your signal strength is similar."

Given the fact that Bob lives only 2 km from my normal QTH, you should have seen the smile on my face!

Later, I copied Ralph VK3FRNB mobile along Springvale Road, with varying signals but workable and NO pagers to annoy the QSO. In the afternoon, Max VK3ZCW and his regular group were all S7 to 9.

Bill VK3KBL received me full strength by pointing his beam at the city buildings, instead of due north where we are located. Mark VK3PI thought I was at home saying, "your signals are stronger than your own QTH."

A sad state of affairs when you have to go to 'work' to put out better signals! Wonder if this work QTH qualifies as a "portable" JMFD setup!

23 cm joins the 'party'

After installing the coax switch, Melbourne repeater VK3RCC on 1273.1 MHz boomed in 'over the 9' and VK3RHF on 1273.4 MHz was heard well 'over the 9' as well.

Full 'Dual Watch' setup

In the end, another run of coax to the roof was completed, with the X-300 installed about three meters away from the X-7000. This feeds to the IC-2720H. About 50 meters of wire was strung across the roof about 1 meter height for HF – not really a great antenna, but 'practical' considerations do not allow anything better. HF signals are there, but marginal due to noise. Now it's possible to continuously monitor the IRLP link of VK3RMH, a spot on HF (or another VHF or UHF spot), and the 23 cm VK3RCC repeater, as well as the club frequency of 146.450MHz.

Photo 3 shows the antennas on the roof of the plaza. The X-300 gives about 2-3 S points less than the X-7000, which is expected, but fine for my requirements.

The future

Bob VK3EL paid a visit and seemed very bemused with the setup, especially the antics on the roof, shaking his head, saying "...I don't know how you get away with it!" I had a chat to Chris VK3FY on his way to work with good signals both on 70 cm and the club 2 m frequency with him mobile.

After informing Chris of what I had been up to, he suggested a full mast of stacked Omnis and trying to work some 'troppo' on 6 metres. I don't know about that, but a discone and a scanner might be fun.

I hope I find time to look after the customers between QSOs! But I had better sell some more stock to make some room for the mini bar!

Last month some electricians were on the shopping centre roof on unrelated works when they came across the two antennas. A quick phone call to centre management came back with the reply, "What antennas!" So it was time to play 'follow the coax', with only 6 metres of it going to "guess where", smack right underneath!

After explaining what they were, and what it did, with an emphasis on the ability to summon help in an emergency and the non-commercial aspect, there appeared to be little fuss!

So now, 'Sexy Socks' err, umm, VK3CH can operate safely in the knowledge that all is approved.

ar

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PALSTAR BT1500A 1500 Watt Double L Balanced Antenna Tuner

The word is out about Palstar's unique, high-end amateur radio products. Carrying on the Palstar tradition of highest quality designed by Hams for Hams.

The American made BT1500A tuner is no exception. The BT1500A is a dual-roller balanced L antenna tuner that fills the void for a matching network up to 1500 watts pep for balanced line antennas. For ease of use the BT1500 utilizes only 2 controls to operate for tuning with two direct-coupled precision ceramic roller inductors. As on all Palstar tuners the front panel and top cover are powdercoated.

So why buy a balanced tuner?

Joel Hallas wrote in September 2004 QST "unfortunately, the typical random sized center-fed antenna with random length ladder line feed has an impedance at the feed point that varies dramatically with frequency. The result can be heating and loss (and occasional damage) at the balun, the classic solution has been the use of an inherently balanced tuner." Joel reviewed the Palstar AT1500BAL as a high-power solution for amateur enthusiasts looking for a balanced tuner. The engineers at Palstar took the AT1500BAL and reengineered the entire tuner inside and out reintroducing it as the BT1500A balanced antenna tuner.

PALSTAR AT1500CV 1500 Watt Antenna Tuner

An antenna tuner that can handle up to 1500 watts (1500 watt PEP). Low profile construction and bullet proof operation. Super smooth control of both capacitors and the inductor. The build quality is excellent using heavy gauge aluminium for added stability. The AT1500CV uses large input and output dials, it's easy to record band settings .

The AT1500CV matches dipoles,center fed doublets, G5RV's balanced feeders, Verticals, single wire, delta loops, beams, windoms, Inverted V's and includes a built in 4:1 balun for balanced wire feeders. Also featured is a bypass position for quick straight-through antenna connections with SWR/POWER monitoring. The bypass switch output allows for use with an added optional 4:1 balun to feed an all-band ZEPP antenna tuned from the built-in antenna tuner located in most commercial tranceivers (optional balun). The AT1500CV features 6 position antenna selector switching and averagepower meter reading to 3000 Watts. Standing Wave Ratio measurements are displayed with an illuminated crossneedle meter and comes with our classic Vernier dial plates for more accurate settings. The front panel and top cover are powdercoated.

PALSTAR AT1500DT 1500 Watt Differential Antenna Tuner

Building on the success of the very popular AT1KM 1200 Watt differential antenna tuner, the AT1500DT features differential capacitor tuning with 2 stators and 1 rotor. For ease of use the AT1500DT utilizes only 2 controls to operate for tuning with a precision ceramic body roller inductor and high power balun. NEW! Peak and Peak Hold dual cross-needle metering ($149.95 value found in our popular PM2000A wattmeter) Powdercoated.

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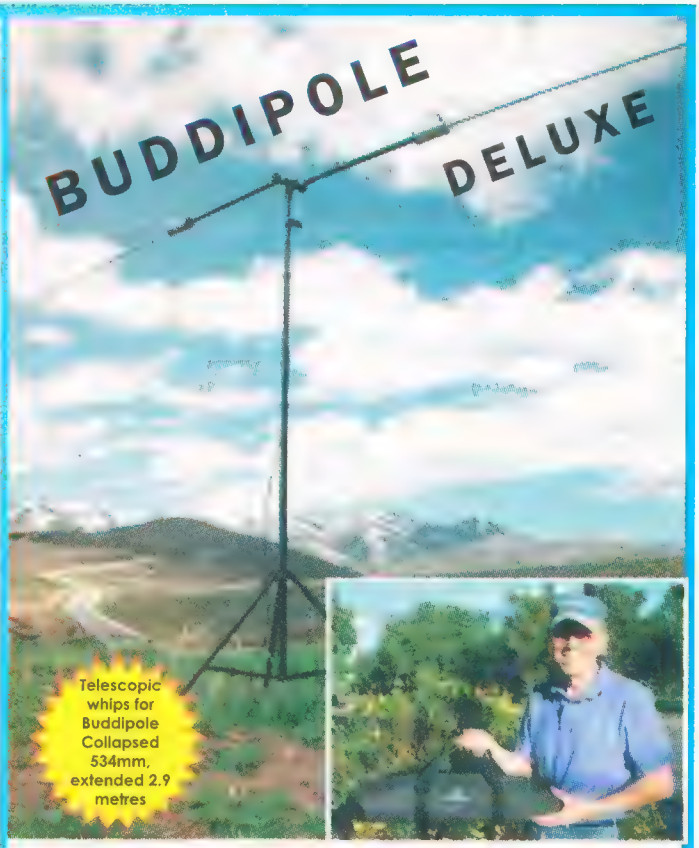
Palstar — Performance — Power — Proper Price

Check the reviews on eham.net



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Book review

Communications for Survival and Self-Reliance

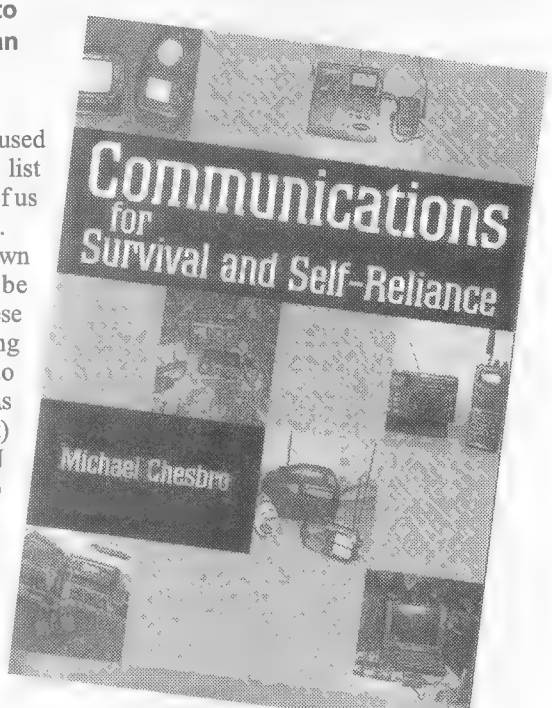
by Michael Chesbro (KD7KLA)

Paladin Press, Boulder, Colorado

Soft cover. Illustrations, photographs, tables, pp.208, ISBN 1-58160-411-4

Have you ever operated your amateur radio station from a remote location? Or, have you ever considered whether you would be able to operate your station completely under your own control, including an uninterruptible supply of power, when a disaster strikes?

Dr Hank Prunckun VK5JAZ



If you are struggling to say "yes" to these questions then Chesbro's latest book -- Communications for Survival and Self-Reliance -- will be of interest to you. Although pitched to the newcomer to wireless communications, the author presents a stimulating look at emergency radio communications. It introduces the reader to the notion of what constitutes effective communications -- that is, a sender, receiver and a reliable method. Chesbro uses this simple formula to assess the value of one radio system over another, and under different operating conditions.

He weights the likelihood of successfully making reliable contact in times of need, and although he doesn't advocate a particular system (for example, HF or UHF CB) he leads the reader, through many examples, to the clear conclusion that Amateur Radio is THE method of choice. To this end, Chesbro concludes with a large appendix containing a pool of US Technician licensing questions as a means of encouraging those unlicensed to take up the hobby.

In this regard, the amateur who has operated on field days or as a member of the Wireless Institute Civil Emergency Network (WICEN) may find Chesbro's book somewhat basic. However, it nevertheless raises serious questions about how well the amateur community would cope in the case of a massive infrastructure failure. Recently we had a taste of this in VK4 with Cyclone Larry. In VK5, the thought of a large earthquake comes immediately to mind as Adelaide sits on a fault line. The likelihood of a terrorist attack is also not out of the question for anyone living in a capital city or near critical infrastructure. Floods, bush fires and numerous man-caused emergencies can be added to the list of potential threats that each one of us faces regardless of where we live.

In such cases, experience has shown that mobile telephony cannot be counted on -- the load placed on these networks by subscribers dialling loved-ones has the potential to cause them to fail. Landline systems (including email and the Internet) are also likely to suffer. As WICEN has long recognised, it may fall to amateur radio operators to provide continuity of communications until infrastructure is restored. (Packet radio may be the only alternative to the email, so hang onto that TNC…)

Communications for Survival and Self-Reliance is an excellent primer on the topic of emergency radio and will be enjoyed by new VK foundation licensees. It also serves as a refresher for those that who have operated stations for years.

It is published in the large 8" x 10" (200 mm x 250 mm) format with text running in newspaper-style columns. It is very readable with illustrations, photographs and tables of information interspersed.

The only drawback is that it is a bit US-centric (for example, the Technician licence questions at the back of the book). But in fairness, the book's main audience is North America. Nevertheless, Chesbro does point out the differences between US systems and operating procedures in many different countries. For instance, one of his main premises is that a disaster in one part of the world will affect the entire world. He underscores this point in his discussion about the importance of using GMT/UTC as well as other issues when operating during emergencies.

Chesbro says, "In an increasingly uncertain world, the ability to have 100% control over your communications is critical to maintaining personal security." I agree! And, it is critical for maintaining the security for civil society. The book deserves consideration by all radio operators, but particularly those interested in lending a hand when disaster strikes.

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Centre Victoria RadioFest
Kyneton
Sunday 22 April
see page 34

The bhi ANEM
(amplified noise eliminating module)

Bill Roper VK3BR

As well as the inclusion of DSP noise reduction in several modern transceivers, there has been a number of outboard DSP noise reduction units available over recent years. Some have been included with speakers and some have been stand-alone units to connect between your receiver or transceiver and your speaker or headphones.

The performance of these DSP noise reduction units has also improved noticeably over the years as new digital chips and software have come along.

The unit under review is of the latest generation of DSP noise reduction modules and appears to perform better than anything that I have come across before.

Photo 1 – The bhi ANEM outboard DSP noise reduction unit.

Outboard DSP units

First of all, let me make something clear to those of you who have not had any experience with DSP noise reduction devices. They will not take the place of a good noise blanker. They will not effectively remove electrical impulse noises.

What DSP noise reduction units will do is distinguish unwanted noise from the wanted speech component of the incoming signal and attenuate the noise, sometimes quite dramatically. In other words, they improve the signal to noise ratio quite significantly and provide greater listening comfort and less fatigue.

They are not for CW use as they do attenuate heterodyne tones.

However, in the process, many of the earlier generation noise reduction units "colour" the signal in that they tend to attenuate the high frequency components of the desired speech, produce a somewhat hollow sound, and also sometimes add digital "waterfall" noises to the audio. In addition, they introduce a delay in the received audio, which is generally irrelevant except that, after switching into circuit, they could take up to a second or so before effectively operating.

Ron Fisher VK3OM, whom readers will know has written many excellent technical reviews of equipment for Amateur Radio, was to provide a technical assessment of this DSP unit for this review, while I was to write about its operation and use. However, Ron, like Eric Buggee VK3AX in his excellent review of the bhi NES10-2 commencing on page 26 of the October 2005 issue of Amateur Radio, found it virtually impossible to measure with instruments the noise attenuation and distortion products of this ANEM unit. Therefore, this unit is being reviewed solely on experienced judgement in actual use in real life situations.

In my noisy suburban home location I use outboard noise reduction units all the time with both HF transceivers in the shack, and with the HF transceiver in the vehicle. I would not be without them. Even though it is difficult to say that I have ever been able to read an SSB signal with the noise reduction unit in circuit that I could not read otherwise, the improvement in comfortable copy, particularly over a period of time, has to be experienced to be believed.

The bhi ANEM unit

The bhi ANEM is a small DSP unit which is intended to be connected between your receiver or transceiver and your own speaker or headphones. Unlike many other units, it does not come with its own speaker.

It is supplied with four stick-on rubber feet if you want to sit it on the bench or on top of your speaker case, and also with a strip of Velcro fastener if you want to attach it firmly to your transceiver or receiver speaker.

The ANEM is compact, measuring only 60 mm wide, by 40 mm high, by 100 mm deep. Controls are simple. A power on/off bypass button, a DSP function button, and

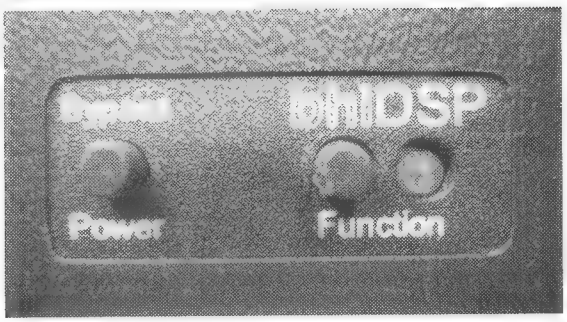

Photo 2 – A close-up of the front panel of the ANEM

a DSP tri-colour LED (see photo) are on the front panel. A power connector (12 -15 Vdc 300 mA), and audio in and audio out jacks are on the back panel.

Operation

If the power is switched on with a single press of the power button, but the DSP is switched off, the audio passes through the DSP unit audio amplifier with the noise reduction bypassed.

The DSP function button is used to switch the DSP processing on and off and, by holding the button in, the processor steps through each of the eight levels of processing. Each level is indicated audibly by the internal sounder, one beep for level one, four beeps for level four, etc. The LED changes colour from green to orange to red to indicate the DSP status.

Like most of these multi-level DSP noise reduction units, it will be unlikely that you will be changing levels after your initial "play" with the unit. Most users will probably settle for either level five or level six for their operating situations (the range of noise reduction claimed by the manufacturer is from 9 dB at level one to 35 dB at level 8).

Setting your preferred DSP level sounds complicated, but it is really quite simple. And once you have picked your desired level of noise reduction there is nothing to adjust when using this DSP unit.

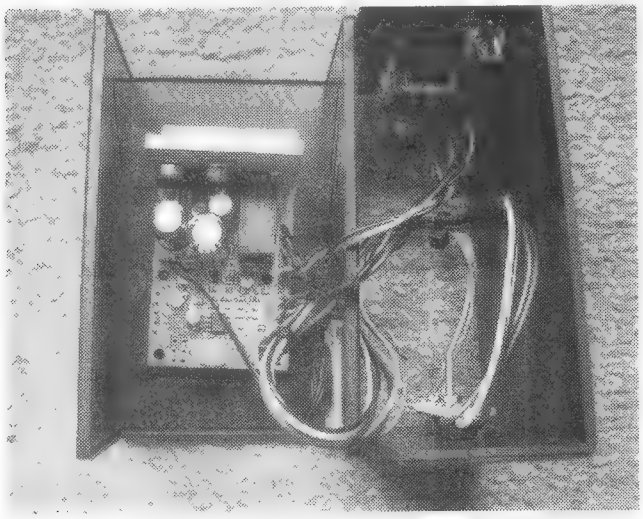

Photo 3 – A look inside the ANEM.

In use

I found this unit to be very effective and it seemed, under exhaustive "ear" tests, to produce a better result than my other three, but still marketed, earlier generation, DSP units.

The noise reduction, when set at level six (which seems to give the best compromise between noise reduction and adding artefacts to the audio), was excellent with virtually no noticeable "colouration" of the audio. It appears that this setting probably provides about 20 dB of noise attenuation. No distortion products were noticed, even when driving the unit rather hard, which means that it has a rather effective inbuilt AGC system.

Although the ANEM is not specifically designed to attenuate heterodynes, it does provide about 20 dB or so of attenuation.

Summary

Would I recommend the ANEM? If you want what appears to be the best performing of the outboard DSP noise reduction units, and you want a "set and forget", then definitely yes!

Would I like one? Yes, even though they are a relatively expensive unit.

One of my home station transceivers, a TS-2000, has inbuilt DSP noise reduction facilities. The ANEM out-performs it. The two in use together are quite remarkable.

A similar situation exists with the IC-706MkIIG I use in my mobile station.

If you want to look at the installation and operating manual for the ANEM, you can download it in PDF format (it is only a 236 kbyte download) from the web at www.bhi-ltd.co.uk

The unit reviewed was supplied by Amateur Radio advertiser Lee Andrews from Andrews Communications.

The price of the ANEM is listed as $349.00 on Andrews Communications web page at www.andrewscom.com.au

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Centre Victoria RadioFest

Kyneton, Sunday 22 April

Less than an hour from Melbourne, Ballarat and Bendigo

Major traders, second-hand market, club corner, come n' try activities and interesting mini-lectures.

For sales tables & car-boot spaces contact Nick Angelo VK3UCK 0448 653 201 or vk3uck@hotmail.com

It will be a family friendly event with a children's playground and shaded areas for a picnic at the picturesque Kyneton Racecourse.

More details on this new event, organised by Amateur Radio Victoria, Central Goldfields ARC and Midland ARC, can be found at the website: http://radiofest.amateurradio.com.au/

See the large advertisement on page 34 of this April edition of Amateur Radio magazine.

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$300 rebate
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Mr Graeme Dowse VK4CAG

Christine Taylor VK5CTY

Publicity for ALARA at the Hamfests

As usual, Dot VK2DB and OM John VK2ZOI have been busy going to hamfests on the east Coast. Also as usual Dot sends us very interesting reports.

For Coffs Harbour:

Sunday 21st January 2007, I attended the Coffs Harbour Field Day with the ALARA table. My table was just inside the front door next to the WICEN table with John Alcorn VK2JWA at the helm. His name crops up on the WIA broadcasts regularly, so I was keen to meet the man who does so much for WICEN. We had a stream of visitors passing and stopping at the table all day.

From Wyong:

On February 18th, we were up early and off to the Central Coast Field Day at Wyong. Very soon after the table was set up the visitors arrived. There is a visitor's book for people to sign and 43 people signed it and had a chat. There were 12 ladies visit the table and 6 of them were ALARA members: Rose VK2ANG who also belongs to HADARC; Karen VK2AKB who belongs to the CCARC and could only chat a moment as she had to go back and work; Leonie VK2FLRK who I was pleased to meet in person for the first time; Lia VK3FLIA who joined on the spot and is hoping to see an ALARA table at the Field Day in Bendigo; Nancy Karas who is hoping that Foundation Licence exams can be held there next year; and Beryl VK2BBM who is always fun to chat to. Five ladies took application forms to read at home, they being Karen VK2NYL, Ros VK2FROS, Sharni VK2FGKC, Janette, who hopes to sit for her licence soon, and Deanna, whose OM Gary VK2NOV was keen for her to join now, but she is waiting until her licence comes through.

I printed off a pile of pages about Tasmania ALARAMEET and naturally when I got home they were still sitting on the printer so I emailed them a copy. All the ladies are interested in going to ALARAMEET and my OM John VK2ZOI impressed on the men that they should go too.

I gave out leaflets of the rules of last year's ALARA contest (explaining it's the last full weekend in August) and although the ladies were a bit hesitant about a contest, their OMs were keen for them to have a go.

Also from Dot:

Nancy and OM John VK2EEH moved to Bowral and even before the boxes were unpacked she had won a trip to Italy. How exciting. They didn't bother to finish unpacking boxes but planned and took the trip.

Nancy and John also went to the 10 Tenors concert at Bowral. Everyone parked in the fields of the Centennial Vineyard. No recent rain so the cars had dust clouds following them! Luckily this dry state of affairs was soon to be corrected. Unluckily this was to take the form of a veritable downpour, which began while the big crowd was waiting under the open skies for the main event to begin. At 6.30 pm it began to rain steadily and continued until the concert ended at 9.15 pm. Everyone under their ponchos or raincoats as umbrellas had been banned by the organisers.

This rain was certainly a mixed blessing for the concert-goers!

Jenny VK5ANW is representing ALARA at Kyneton (Centre Victoria Radiofest) this year, so keep an eye out for her. Jenny is one of the earliest members of ALARA, joining before she had a licence in about 1980. She has held a number of different committee positions including President but she has been unable to participate in most ALARA activities in more recent years. We are glad to welcome her back. Look for her at Kyneton.

The ALARAMEET in Tasmania in 2007

Plans are going ahead for our entertainment in Ulverstone in Northern Tasmania, next year in September (13th and 14th). At this stage we are just looking for expressions of interest so we have an idea of numbers. If you send a form to say you are interested but eventually cannot come it is no problem. If you don't send a message now but later discover that you can come, that is also not a problem.

We would just like you to come along and enjoy yourself meeting some of the faces you may have heard on air. OMs and families have fun, too, so bring them along. In case you do not know, Susan, the co-ordinator of the Ulverstone ALARAMEET, has three children who are sure to be part of the action!

Susan will help you make bookings for caravans or cabins, and recommend motel or hotel accommodation near to the venue. Please think about joining us.

An International YL Meet In 2008

Following is an invitation from the South African YLs for YLs (and their OMs if they wish) to attend the next International YL Meet in 2008. Dates are not definite yet but the Meet should take place towards the end of September, beginning of October, starting off in Johannesburg.

Optional tours will be included in the 2-week programme. A special Yahoo Group has been set up so you can obtain further details as they become available and so you can make suggestions and discuss plans with other intending participants.

To join this group, e-mail Janet, ZS5JAN, accsol@thenet.co.za with your name and e-mail address, and Janet will contact you with details as to how to join the Group.

Gwen VL3DYL had passed on this official invitation to everyone.

International YL Meet South Africa 2008

Sawubona,*

A big warm South African welcome to you!

The 2008 International YL Meet will be taking place in South Africa and will be organised by Vee ZS6ZEN and Janet ZS5JAN. We invite you to join us on our special SA Yahoo Group so that you can be part of the developments as and when they happen.

The YL Meet and Convention will take place over a few days and will be an exciting and unforgettable experience of the diverse and vibrant cultures of our Rainbow Nation. Thereafter you are invited to join us on various tours through our beautiful country.

And some of the things you will experience .....

You will go on a bush safari to view our wild animals in their natural environment and will discover why the African

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A receive filter that can be used in an outdoor housing (Pictured) to be mounted close to your antenna on the mast, or can be used in a diecast box for indoor use near your transceiver or receiver. The filter is set to 148.5 MHz but may be tuned by the user across the 148 to 149 MHz Pager band. A selection of connectors are available including BNC and N Type. Where transmit is required this filter can be switched out of circuit by the use of coaxial relays linked to the PTT switch.

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Phone: (03) 9548 2594
FAX: (03) 9547 8545

ALARA *continued*

Bush is such a special experience.

You will experience first-hand some of the different lifestyles of our people, enjoy their traditional meals as well as their dancing and crafts.

You will be delighted with our endless coastline of waves against sand and rocks; plus you will have the opportunity to have some fun in the sun.

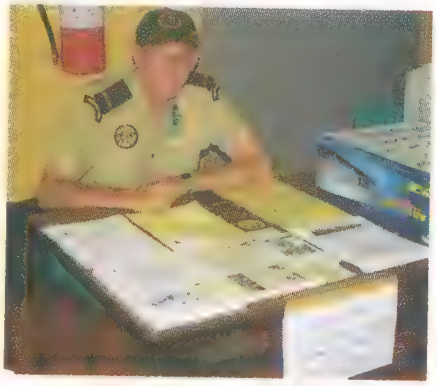
You will be awed by our endless green rolling hills where there are sudden sheer drops into deep valleys which often rise into majestic mountains.

You will visit famous places that make up the rich, exciting and often sad history of our country which will touch your heart and maybe move you to tears.

And you will have the opportunity of enjoying different cuisines at our many

continued on page 30

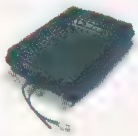
Dot VK2DB, Dawn VK4HER and Val VK4VR



John Alcorn VK2JWA

Carolyn VK2FCSR

FEATURE TECH



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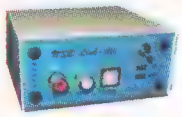

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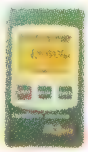

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Offering the Worlds strongest, safest and most versatile small footprint, free standing, communications tower.

Raise and lower your array safely and easily for adjustment WITH BOTH FEET ON THE GROUND!

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Maxi towers 10m (OMT10) – 12.5m (OMT12.5) 15m – (OMT15)
Maxi towers are also available in Deluxe version with DC motorised winch.
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AEI also carries the fantastic "OzSpid" rotators.

RAK – medium/heavy duty Azimuth and RAEL – medium/heavy duty Elevation.
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In addition. We also offer a very competitively priced Australian made 5:1 braking winch.
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And. We now manufacture a range of Delta Loop, Quad and Yagi antennae.

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Over to you

The best of both worlds for 'F' licence holders

With all the new "F" Calls, both old and young, coming up on VHF, namely 2 m FM, I discovered that many of these F calls did not realize or even know that 2 m SSB existed! Many had passed the practical of their AOCP with a couple of contacts on 2 m FM.

In their enthusiasm, they had gone out and bought FM only Transceivers. Some had bought all band multi-mode transceivers. I managed to explain to some of the keener F calls that they could use 2 m SSB and to give it a try.

The first obstacle was that they only had vertically polarised antennas, usually a "J", a "Slim Jim" or just a mobile whip mounted on the shack roof. First problem fixed, we would use vertical polarization.

The 2 m SSB F calls were amazed by the signals. The next problem was frequency accuracy, "I can hear you but can not understand you"! OK, treat it like HF SSB, switch on the RIT and resolve each station with the RIT control. Problem solved. Most F calls were impressed by the readability of the signals for their strength. "You are only 1 to 3 on the "S" meter but perfectly readable".

We now have a Friday Night Net on 144.150 MHz SSB USB at 8:00 local,we go for about an hour. The best is 10 stations.

I am now trying to convince the keener ones to try a 2 m Yagi. Make or buy something like a 4 to 8 element antenna and see the difference.

Some of them who only bought 2 m FM transceivers have gone out and bought second hand 2 m multimode Transceivers in mint condition, even with the original packing, with comments from the sellers like, "I bought it years ago and have only had a couple of QSO's with it!"

With some of the F calls that bought multi band all mode units, I have convinced them to also try 70 cm SSB on 432.150 MHz.

So far we have had about 4 to 5 stations on this new 70 cm group usually after the 2 m Net. Again antennas are vertically polarised as that's what they have for 70 cm FM Repeaters. Many of them have never had a "Simplex" QSO, on either band, only on repeaters.

If we get enough to have Yagis for both 2 and 70, the next idea is to suggest that we switch to the conventional horizontal polarization for better SSB DX! This raises another problem! Do we all have two sets of antennas, one vertical and one horizontal? I believe a pair of Yagis that can be rotated from vertical to horizontal could be easier. It would not be difficult if you had a pivoting cross arm with a 2 m beam on one side and a 70 cm Yagi on the other. It's been done before. If the cross arm was biased/weighted so that it moved to one polarization of its own, only a light rope would be necessary to pull the cross arm to the other polarization. You may have trouble with a rotatable system but that could be solved with a little bit of ingenuity.

So there you are, the best of both worlds, SSB or FM, horizontal or vertical polarization.

Think about it, new "F" Calls, and give it a try! Hear you on 2/70 SSB in VK5!!

Steve VK5AIM

ar

ALARA *continued*

restaurants; and shop till you drop at our many varied shopping emporiums

It will be a memorable experience of people, places and landscapes. Yes, we would certainly love you to share in this African adventure while you catch up with old friends, make new friends and enjoy our hobby of Amateur Radio.

Because, of course ..... a radio station with a special call sign will be set up for the duration of the convention and the possibility of radio stations being available on the tours is being investigated.

So .... a warm welcome from South Africa. If you and your OM are interested in attending the 2008 International YL Meet and Tour, please acknowledge this mail so that you can join the SA Yahoo Group.

73

Janet Musto ZS5JAN

Moderator of the Yahoo Group

PS.

**"Sawubona", means "Hullo" in Zulu (used here to address one person)*

"Sanbonani" means "Hullo" in Zulu to a group of people.

For more information on South Africa and in particular, travelling in SA, you can check out these two wonderful websites: www.southafrica.net and www.southafrica-travel.net

This all sounds most exciting. Thanks Gwen for passing it on to us.

ALARA luncheons in VK5 going from strength to strength

We are fortunate in VK5 to live in a relatively small city so that it is not difficult for us to get together once a month.

We meet in the restaurant attached to the Museum in the heart of Adelaide. As all the trains terminate in the city and most of the buses pass through the city Adelaide is an easy city to reach without the worry of car parking.

If you are visiting Adelaide or have recently passed your foundation licence and have not yet been approached by a keen ALARA member to join us for lunch, come along anyway, on the second Friday of the month at 12 noon. Ask at the counter if you can't find us.

At the luncheon in February, Jenny VK5ANW joined us for the first time for a number of years and Mary VK5AMD and her OM Murray, up for the day from Bordertown, were welcome additions to the group. Several of the regulars were missing but there were still 8 or 9 at the table (Meg was held up but came late, anyway which is why the number varied).

ar

VK3

Amateur Radio Victoria News

Website: www.amateurradio.com.au
Email: arv@amateurradio.com.au
Jim Linton VK3PC

A hectic month

The results of six months planning will be seen when the new event on the amateur radio calendar, the Centre Victoria RadioFest, occurs at the Kyneton racecourse on Sunday 22 April.

The event that lots of people are talking about is a joint venture of Amateur Radio Victoria, Central Goldfields ARC and Midland ARC.

An advertisement in this edition of Amateur Radio magazine announces the latest information or check out the website radiofest.amateurradio.com.au

Please make an effort to attend the RadioFest and give it your support. It promises to be a great social occasion for radio amateurs.

While preparation for the RadioFest has occupied many volunteer hours over the past six months, its finalisation comes at a time when some of those volunteers are also busy with financial, corporate and reporting matters for the annual general meeting.

The Secretary, Peter Mill VK3APO, announced in January that the AGM will be held on Wednesday 23 May, at St Michael's Hall, corner Victory Boulevard and High Street, Ashburton, commencing at 8 pm.

As previously the practice, the annual reports will be available to members electronically for those who have recorded their email addresses and mailed out to others. A printed copy will be provided on request to any member.

New logo and website

A new logo for Amateur Radio Victoria has been well accepted by those who have seen it.

As foreshadowed in this column last month, a graphic designer was asked to create a logo that incorporates our traditional wings and lightning bolt, and a map of Victoria.

The new logo does just that in a clean, simple, modern and readily recognisable new brand mark. It will progressively be used on stationery and other items bearing the logo.

At the same time a new-look website design was launched at the beginning of this month, which also uses the new logo. While retaining the content of the old website, the new one is quite smart looking, functional and includes a few additions.

Volunteers wanted

We are in immediate need of at least three volunteers to be rostered at the office, 40g Victory Boulevard, Ashburton on Tuesdays.

This is an ideal role for those retired or semi-retired who have some basic computer skills. Training in office procedures will be provided.

A specific task of 'Membership Secretary' appears essential now that the organisation is responsible for its own membership records, new memberships and renewals.

If you are able to be involved, please visit the office on a Tuesday between 10 am to 2.30 pm and indicate your interest in becoming a volunteer, or send an expression of interest via email to arv@amateurradio.com.au

Licence classes

The next Foundation Licence training and assessment weekends at Box Hill will be on 14 & 15 April, and May 19 & 20.

If you know someone who could be interested, please let them know these dates and to contact our Education Team Leader, Barry Robinson VK3JBR on 0428 516 001 or arv@amateurradio.com.au

Waffle Award Errata

Congratulations to Paul Brown VK3HJV on qualifying for the Welcome Aussie Foundation Licensees award. Sorry we mistyped Paul's callsign when listing award winners last month.

A list of those who submitted entries appears on the Amateur Radio Victoria website.

Thanks also to Terry Murphy VK3UP, who has taken on the task of completing the award design so they may be issued.

VK4

Ipswich & District Radio Club

Michael J. Charteris VK4QS
President

Ipswich and District Radio Club celebrates its 45th birthday

1962 ~ 2007

On Sunday, March 11th 2007, members of the Ipswich & District Radio Club celebrated what could only be described as a momentous event. This being the Dual Birthdays of 45 years since the Radio Club was established in the year 1962, as well as 40 years since the "Old Boy" Members of the Club built our Clubhouse. Prior to the opening of the Clubhouse, the first meeting was held at the Scout Hall on Milford Street in Ipswich on August 28th 1962.

I would also like to make reference to the excellent book by Mr. Alan Shawsmith "Halcyon Days", that states, "1924: Ipswich Radio Club affiliates with the RSQ (Radio Society of Queensland), and installs its station at the BOYS' GRAMMAR SCHOOL."

So we have indeed had a very long association with Radio in this city of ours, stretching back more than 83 years. Might I also note that the RSQ was also only formed in 1924, with its general Meeting being held in the Trades Hall Brisbane with a membership of just 24.

To mark these celebrations, a BBQ was organised for past and present members at the Clubhouse, located at 10 Deebing Street, Denmark Hill, Ipswich. It was a fine sunny day, which reached a top temperature of 38.5 degrees Celsius by late morning. The cooking of the BBQ for the day was kindly undertaken by Mrs Lorie Charteris, wife of Mike Charteris

News from...

Ipswich & District *continued*

VK4QS, Club President. This was greatly appreciated by all those present and a hearty lunch was enjoyed by one and all, with the club putting on free soft drinks for the day. To cap off the celebrations, a Black Forest Torte Cake was produced for desert, with coffee and tea served accordingly.

Those who attended the Clubhouse on the day were: Warren Heaton VK4GT, Bob Linsket VK4ALI, John Edwards VK4IE (Treasurer), Gary Neilsen VK4KNE, Trevor Burow, Brent Scriven, Bob Cole, David & Hilary Ambler VK4KPM, Sandro Bertoloni VK4II, Glen Woodrow VK4FARR, Mr & Mrs Wayne Bryce VK4AB, Rob Bryce VK4HW, Lorie & Mike Charteris VK4QS (President) and his sons Zack & Xzavier. To highlight public awareness, we contacted the Queensland Times who were kind enough to come and take our group photo and conduct an interview as to our club history and activities these past 45 years. We now look to the future, when in five years time our club will turn a Half Century... in 2012, if in fact we are all still here.

As President of the Ipswich & District Radio Club, I, Mike Charteris VK4QS, would like to take this opportunity to extend an invitation and the hand of friendship to all Amateurs in the Ipswich area to visit our Clubhouse on either the 2nd Monday and/or 4th Monday of every month at 7:30 pm. For there is a wind of change in the air and we are moving forward with a wonderfully motivated and dedicated team of Amateur Radio Operators. We have been very fortunate to have some great guest speakers and look forward to such highlights throughout the year to come and beyond. A light Supper with Tea and Coffee is also provided for all those attending, and often bringing a little plate adds to the joy of such occasions. This combined with regular Club BBQ's has seen a renewal of the Radio spirit at our Radio Club. We would look forward to seeing you, no matter what aspect of Radio you enjoy, be it Short-wave Listening, Satellites, DXing, or gaining an "F" Call Ticket. Should you wish to contact me personally, my phone number is (07) 3282 9539.

Best wishes, Mike Charteris VK4QS (President)

VK7

Justin Giles-Clark VK7TW
Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

Congratulations to Rex Moncur VK7MO who convincingly won Section C of the 2006/07 Ross Hull Memorial VHF-UHF Contest. Rex used mainly 23 cm and some 2 m contacts to compile a massive 23,774 points.

A recent look at the ACMA Radiocommunications database of amateur licence holders reveals there are currently 71 Foundation licence holders in VK7. Considering there are 579 licensed amateurs currently in VK7, once you remove the 22 beacons and repeaters, our Foundation licensees account for a little over 12% of our VK7 amateur population. This is a real credit to all trainers, assessors, invigilators and the many people who volunteer their time around the state.

VK7 BPL Noise Floor Report released

A lightning strike in February resulted in a loss of power in the Mt Nelson BPL area. With power and BPL systems non-operational, background noise level measurements were taken around the QTH of VK7HCK and VK7HK. The measurements were taken using Owen Duffy VK1OD's Field Strength Measurement (FSM) software. Comparisons between the previous noise floor measurements taken in January, March and July 2006 and measurements taken with no power and no BPL, show a noise floor that is between 10.9 dB (12 times lower) and 12.6 dB (18 times) lower than the previous noise floor measurements taken outside the BPL trial area. The key conclusion from this report is that the initial impacts of BPL emission levels are understated. The report can be found at: http://reast.asn.au/vk7bplwatch.php

Rescue Radio

Charles VK7PP and Stu VK7NXX demonstrated how amateur radio assisted a stranded yacht off Tasmania during late February. Charles assists Roy VK6BO, with the Traveller's Net (14.116 MHz) between 1.00 and 2.15 pm (EDST) each day. Jure S52YS, a non-stop lone round the world yachtsman, was several hundred kilometres off the Tasmanian coast and was only making 2-3 knots with a broken forestay. Location information was relayed when possible with the assistance of Roy and Ross VK5KMH in Adelaide. Stu was involved both as an amateur and as a Coast Radio Hobart operator and notified Customs and the Rescue Co-ordination Centre in Canberra about Jure's progress. Marine VHF was utilised when Jure was closer to the coast. Eventually, Jure's yacht was towed into Hobart on Sunday (25/2/2007). The boat's name was "LUNA" and a big tick, HIHI.

North West Tasmanian Amateur Radio Interest Group

Congratulations to Wayne VK7WAY, Daniel VK7FDWB and Bob VK7FROG for successfully passing their practical and theory assessments. We look forward to hearing them on air soon and welcome them to Amateur Radio. A reminder that VK7 has two main BBS and Packet gateway systems operational. Both stations provide a broad range of packet radio services – in the NW, VK7AX-8 Gateway and VK7NW BBS are on 147.6 MHz and in the South, VK7HDM-6 Gateway and VK7HDM-9 BBS on 147.575 in the South. Both use 1200 baud.

Northern Tasmania Amateur Radio Club

The NTARC AGM was held on 14 February with the following office holders being elected: President: Allen Burke VK7AN, Vice President: Jason Reilly VK7ZJA, Secretary: David Potter VK7YUM and Treasurer: Robert Richards VK7KRR.

IRLP Node 7400 has been relocated and is now back up and running thanks to Tony VK7YBG and Tony VK7AX. The

6 m repeater on VK7RAA is also back in operation thanks to Joe VK7JG.

Anyone wishing to upgrade their licence or wishing to sit the Foundation licence in the North/North East please contact Al on 0417 354 410.

Radio and Electronics Association of Southern Tasmania

The REAST AGM & BBQ was held on Sunday 11 February. 40 people attended and the following office holders were elected: President: Justin Giles-Clark VK7TW, Vice President: Clayton Reading VK7ZCR, Secretary/Public Officer: Danny Moss VK7HDM, Treasurer: Scott Thomson VK7FREK, and committee members: Gavin O'Shea VK7HGO and Ken Sulman VK7DY. We then headed into a BBQ and most people stayed and enjoyed a snag and the social aspect of the hobby.

A quick reminder of the new Echolink node, which is number 331193, and is available for use on Southern repeaters VK7RAD and VK7RHT via the EchoIRLP service.

We congratulate Fernando VK7FJOK and Mark VK7FMDF who successfully passed their Foundation assessments. We also congratulate Andrew VK7CAV, John VK7VQR and Ben VK7HAH, who all passed their Advanced assessments. John and Ben are awaiting their Advanced callsigns. If you are interested in a Foundation training and/or assessment session then please contact Reg VK7KK on 0417 391 607.

VK5

Christine Taylor VK5CTY

Adelaide Hills Amateur Radio Society

It was the AGM for AHARS in February. There was only one change to the committee. David VK5AMK who had been acting-Secretary for part of the previous year was nominated into that position. All the other committee members accepted re-nomination and there were no other nominations so there was no need for an election.

At the conclusion of the AGM Graham VK5ZFZ was named the Denis Grieg Member of the year in recognition of the very good construction nights he sets up for AHARS each year. Congratulations Graham.

President Jim VK5NB thanked the committee members, and the AGM closed for a general meeting. This was addressed by Barry VK5ZBQ who gave everyone a run down of the new repeater he has installed at Crafers. He had one of the units opened up so members could understand how it operates.

Barry and Brian VK5VI from NERC have worked very hard to upgrade the repeater system for VK5RAD since it was passed into the care of AHARS on the disbanding of the WIA(SANT Div).

It is a credit to them and should continue to be an asset to VK5 and to the WIA under their care. They have also been fortunate enough to obtain matching units and some spares for use in some of the other repeaters in VK5 so the future looks good.

After Barry's presentation a short talk was given by Christine VK5CTY outlining the history of AHARS and of the Blackwood Radio Club that preceded them, in the 1920s.

This material was all gathered by Lloyd VK5BR during his time as Historian and can be read through a link from the VK5BAR website.

We have a proud heritage and we even have one member, Gordon Raglass who was a member of the Blackwood radio club as a young man, is a member of AHARS and was made an Honorary Life member of AHARS some years ago.

RAAF SIGNALS & RADAR ASSOCIATION OF SA

The annual luncheon will be held on

Thursday 19 April 2007

(12 noon for 12.30 lunch)

(Please bring your Seniors Card)

***Venue*: Marion Hotel, Marion Road, Mitchell Park**
Public Transport Bus 243, Stop 24

RSVP to one of following committee members before 15/4/07
***Secretary*: Ray Deane (VK5RK) Ph 82715401**
***Assistant Secretary*: Ron Coat (VK5RV) Phone 8296 6681**

Ray Deane
Honorary Secretary

"Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the

Radio Amateurs Old Timers Club Australia

or if you have been licensed for **less than 25 but more than ten years**, you are invited to become an **Associate Member** of the RAOTC.

In either case a **$5.00** joining fee plus **$8.00** for one year or **$15.00** for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to
RAOTC,
PO Box 107
Mentone VIC 3194
or call Arthur VK3VQ on **03 9598 4262**
or Bill VK3BR on **03 9584 9512**,
or email to raotc@raotc.org.au
for an application form.

Centre Victoria RadioFest

Amateur Radio Victoria / Central Goldfields ARC / Midland ARC

The exciting family friendly radio event that everyone's talking about!
Less than an hour from Melbourne, Ballarat and Bendigo.

Find a bargain, socialise, learn something new or even take home one of the door prizes.

Sunday, 22 April 2007 Kyneton Racecourse

- The most commercial traders of radio gear
- Second-hand radios, equipment, bits & pieces
- WICEN emergency communications display
- Interesting mini-lectures - ask the experts
- Historical display of radio equipment
- Club Corner – APRS, ATV, GippsTech, WIA & more
- Come n' try sniffer foxhunts - Jack Braham VK3WWW
- Hear the latest on the BPL threat to HF radio
- IOTA DXpedition video and photographic display
- Terry Murphy VK3UP's antenna factory – DIY dipoles
- F-Troop Net live with new licensee photo call
- Advice on how to get a Foundation Licence

Entry: Admission price is $10. Children aged 12 and under are free. Tickets go on sale from 9am and so does a hot breakfast. Gates open 10am.
Venue: Kyneton Racecourse, Campaspe Place Kyneton, off Beauchamp Street.
Refreshments: A nice spot for a picnic. Hot food goes on sale before the gates open and through the day. Sandwiches and other food also for sale. Free tea and coffee.
Second-hand market: Trestles and carboot spaces available. Contact Nick Angelo VK3UCK 0448 653 201 or email vk3uck@hotmail.com

Plus: A children's playground and free face painting. Mini-bus visit to local tourist attractions.
An information service - Mt Macedon 2m repeater Saturday afternoon & Sunday morning.

For more details including a car-pooling online noticeboard visit the website:
radiofest.amateurradio.com.au

Organising Committee:
radiofest@amateurradio.com.au
Box 2354, Bendigo Mail Centre 3554
Fax: (03) 5442 8025 Ph: (03) 5442 8022

VK5

Fleurieu Peninsular Luncheon

Another successful luncheon at the Goolwa Hotel was held in early March. The number attending seems to increase each time, a satisfactory situation for those who started the group.

Many of those who attend speak to each other regularly. Someone usually has a new 'toy' to show off, this time it was John VK5BJE, with an antenna tuner suitable for mobile operation.

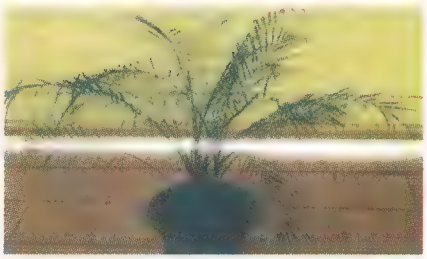
As usual most people went around to the QTH of Garry VK5ZK and his XYL Cecily to enjoy coffee and a spectacular view while they talked together.

Some of the old and some of the new faces can be seen in the photos.

Of some interest is the continuing health of the fern given to Garry and Cecily last year. It seems to like the new enclosed area. May it continue to give them pleasure and to remind them that their guests appreciate their hospitality.

ar

John VK5BJE showing off his new toy



The fern

John VK5EMI and Robin VK5KEY take in the view

SOUTH EAST RADIO GROUP
Radio Convention
June 9th and 10th
Margaret Street Scout Hall
Mount Gambier
Doors open 12 noon Saturday.
Information — Wayne Kilpatrick
0407718908 or email
serg@internode.on.net

NEW!!
VERTICAL ANTENNA
MODEL NUMBER: VA-71
Primarily designed for those with limited space this light but sturdy antenna is another fantastic alternative for users with small backyards.
$275.00 inc. GST
SPECIFICATIONS
FREQUENCY RANGE : 1.8 to 30MHz* (160 to 10m)
HEIGHT / ANTENNA LENGTH: 7.1m
RADIATING ELEMENT: Aluminium
MOUNTING: off a building OR a few metres off the ground
$145.20 inc. GST
OPTIONAL EXTRAS
4:1 Balun
300 Ohm Ribbon
Z-100 LDG Autotuner
see website for details on the optional extras!!
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News from...

VK2

Tim Mills VK2ZTM.
Via vk2wi@ozemail.com.au

APOLOGY : ***Last month it was incorrectly reported that Lawrence Kennedy was a SK. He is alive and well. Apologies for any discomfort caused.***

Clubs

The annual Central Coast Wyong Field Day was another great day. The weather was kind, but the air conditioned grandstand was nicer. The growing trend to arrive early, leave early, was noted during the day.

While visitors were kept out of the Trader area until 8.30 am, the early arrivals descended upon the flea market area or the bistro for breakfast. Some thought the attendance was down on previous years, didn't seem so for those who had to walk in from the far side of the car park. This event is a major undertaking for the Central Coast ARC and their members and helpers have to be thanked for their time and effort for the enjoyment of the attendees. The change of venue from the jockey's room for the lectures enhanced their presentation and the enjoyment of the audience. They will do it all again next February.

The Waverley ARS, who meet in the Scout Hall at Rose Bay in Sydney's eastern suburbs, will conduct their annual auction on Saturday 23rd June. The club was founded in 1919 and the callsign VK2BV, issued in 1920, is still assigned to them.

Amateurs in the southern suburbs of Sydney are served by the St. George ARS, who meet on the first Wednesday evening at the 1st Kyle Bay Scout Hall.

This month, the Urunga Convention is being held over Easter, an annual event started in 1948. Oxley Region ARC at Port Macquarie has their annual field day over the June long weekend. The Blue Mountains ARC will most likely have their annual event in August. About the same time should be the annual south west field day in the Riverina area of VK2. This event was started in the early 1950's by the late Jim Edge VK2AJO and was held on the October long weekend. These were two day events, held in a different town each year. There were many field events, centred on fox hunting. A dinner was held on the Saturday night. There were often displays by the traders of the day and the usual range of disposals. Most towns in the region had their turn, some more than once. Some of the towns and locations included Deniliquin, Griffith, Narrandera, Grong Grong, Young, Coolamon, Wagga Wagga, Albury, Tumbarumba, Tumut and Canberra. Who did I miss? Nowadays the event alternates between Albury and Wagga. This is a piece of history that should be recorded before it is all forgotten. Anyone with snippets about the past events might like to send them to me via the ARNSW email address. Thank you.

In February, the Tamworth RC provided a weekend of Amateur Radio to over 200 local scouts. Hopefully many will have left with an interest sparked in the hobby. The request last month for details of club conducted exams is also being sought by Ted VK2ARA for inclusion on the WIA web site. Please include both the WIA and ARNSW when you send in details, we need to let as many as possible know of these examination facilities.

ARNSW

The AGM of ARNSW will be held this month on Saturday 14th April. When nominations for the council closed at noon on 3rd March, no ballot was required. There were nine nominations for the nine positions. Also, no notice of motions had been received, so it may be a quick, quiet meeting. Hopefully, members will still turn up in time to achieve the required quorum. The annual report should now have reached ARNSW members by either email or snail mail. If not, members should contact the office by email vk2wi@ozemail.com.au ; telephone 02 9689 2417 or mail via P.O. Box 9432 Harris Park NSW 2150. A report about the meeting will appear in these notes in the June issue.

In last months VK3 notes, Jim VK3PC reported on the production of a new logo for ARV. ARNSW developed their logo soon after the changeover which mainly features on the official correspondence.

The next round of exams conducted by ARNSW will be on the weekend of 28/29 April. Applications close on April 17. Forms can be found on the web site at www.arnsw.org.au . There are three months left for the construction of the 80 metre AM transmitter promoted by the Homebrew and Experimenters Group of ARNSW. This group meets on the first Tuesday evening each month at McDonalds, North Parramatta. They have a net on VK2RWI 7000 on the third Tuesday evening. They have a practical day at VK2WI Dural on the afternoon of the bimonthly Trash and Treasure event. The next will be on May 27th. The Home Brew group also has a technical newsletter, which is available in both electronic and printed format. The Home Brew Group mounted a stand and display at the recent Wyong field day. They were kept busy with both sales and inquiries. While they are Sydney based, they encourage membership from throughout VK2. Details about them and many of their projects are to be found on the ARNSW web site. Follow the links.

The changing Sydney CBD city scene

For some years the strip of York Street opposite the Queen Victoria building was an electronic alley of stores for Dick Smith, Tandy, Jaycar and David Reed, who was an agent for Altronics. The line up is shrinking. The latest to leave is David Reed. Oxford Street used to be 'Disposal Alley'. Like the comments made above about the south west zone conventions, history should record the various electronic sources that have existed both in the city and throughout the country. What do you remember?

Next month, the WIA AGM will be held at Parkes. This is most likely the first time a WIA AGM has been held outside a capital city venue and will be an opportunity for country members to be easily involved. This area is represented by the Parkes and District ARC.

73 – Tim VK2ZTM.

Bill Magnussen VK3JT

Latest update on KiwiSat progress

The KiwiSat section of the AMSAT-ZL web site was updated in February 2007. There have been some important milestones passed and everything is on track. Visit the AMSAT-ZL web site and follow the KiwiSat links to read the latest detailed information on this exciting project.

Generous donations to speed up completion of P3E

Following a meeting between representatives of AMSAT-NA, AMSAT-UK, and AMSAT-DL, a decision has been made to donate a total of 40,000 Euros to AMSAT-DL for the purpose of funding the continued operation of the Central Development Lab - "The ZEL". The ZEL was established over 20 years ago at the University of Marburg by AMSAT-DL for the purpose of satellite construction. It is in this suite of workshops that several amateur space frames have been constructed, integrated and tested, including the famous OSCAR 13. The ZEL is staffed by approximately 10 engineers, technicians, administrators and others, who are a mixture of University employees and AMSAT-DL volunteers.

The major current project in the ZEL is the construction of P3E. Although construction is centred at Marburg many of the components come from other parts of the world, including the Integrated Housekeeping Unit (IHU-3), the CAN-Do buss interface modules, the STAR camera from AMSAT-NA and the U/V SDX transponder module from AMSAT-UK. P3E is considered vital to the amateur radio space community for a variety of reasons.

Currently there is no high orbit satellite carrying analogue transponders allowing DX multiple simultaneous contacts. There are amateur radio satellites in low earth orbit but these, because of their low orbit, only support relatively short range contacts and are only visible for short periods of time (eg. 10 - 15 minutes). The proposed orbit of P3E will cause it to be visible from amateur radio stations on earth for several hours at a time, allowing increased periods of operation and experimentation. P3E is considered a 'low risk' approach based on many of the design parameters of the hugely successful OSCAR 13. In order to keep costs low, it is based on a spare flight chassis left over from the OSCAR 13 development program.

There will however be several innovations. For example, the Mode U/V transponder, with a planned 80 kHz bandwidth, will be based on DSP technology using software developed in the UK and SDR HELAPS jointly developed with AMSAT-NA. The IHU-3 will be a new development based on a unit successfully tested on OSCAR-40.

There will be several other experiments which will test techniques needed for the proposed flight of an amateur radio spacecraft to Mars (Phase 5A). Among those will be a low power beacon simulating the weak signals that the Phase 5A satellite will send back to earth on its journey to Mars. This will allow radio amateurs to test their stations in readiness for P5A.

The optimal years for launching a Mars bound spacecraft are 2009 or 2011, so it is important that P3E is launched as soon as possible. This is currently planned to be at the end of 2008. It is realised that the next important step is to obtain an agreement with a suitable launch agency to undertake to fly the satellite.

Photographs of the ZEL at Marburg can be found at http://n4hy.smugmug.com/gallery/383989/ and http://www.uk.amsat.org/index.php?option=com_wrapper&Itemid=94

Now Hear This!

Bob Bruninga is well known to the satellite community. He works at the US Naval Academy and is in charge of their Satellite Lab. Bob has been responsible for the PCsat series of satellites and before that he was well known as author-developer of the APRS software package. Bob is never one to shrink from a challenge. His response to a question on the AMSAT-NA bulletin board recently is witness to that. From time to time questions appear on the BB asking "Why can't we get .... something or other?", or "Why can't they do .... something or other?". It may appear simple enough to have another radio or an ancillary bit of apparatus sent up to the ISS or included on a Shuttle mission. But ISS and the Space Shuttle are manned missions. People's lives are at stake. Read on! The question "Why can't we just simply switch it off if there's a problem?" was in regard to switching off a transmitter should a conflict arise. Over to Bob:

A 2 W transmitter on shuttle or ISS is considered a catastrophic safety hazard due to potential for loss of life due to interference or reset of a space suit (during an EVA), or shuttle/ISS control systems or anything else. Not only must we then design a system with FOUR independent ground commandable OFF switches in series (or three that have positive feedback), they all must be proven to be man safe to NASA man safe criteria. This means, not a $2 on/off

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC . In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times.

All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
9 Homer Rd,
Clarence Park SA. 5034

Graham's e-mail address is:
vk5agr@amsat.org

switch, but a $5,000 on/off switch that has been built from raw materials that have a paper work history all the way back to the manufacturer certifying the materials, assembly procedures, and all testing, and all handling of -each- such switch.

Now that is just a switch. You have to have this for every component involved in the on/off of a man-safe circuit, or that an astronaut touches. Then you have to present this material and plans 4 times to the 30 or so engineers on the NASA Safety Review board. Each meeting involves flying people from all over the country to participate. Meetings usually take 2 days to review every detail of the design. At $200 per man day plus travel, that is $6000 times 4 or $24,000 just for the meetings, not counting the days of preps and reviews of everyone leading up to it.

Then the documentation, and reviews, and presentations... And testing, and travel to observe testing, and paper work over 3 years, all because a 2 W transmitter is considered to be a catastrophic hazard.

Then you fly. Now you say, we "simply agree to turn it off". But this involves a week of planning for each "turn off". NASA must have a plan at least a week in advance, not only showing when we are going to turn it off, but what backup systems we have in place to assure that it will be off. And the exact time is planned, but is not known for sure, it changes up to the day of the EVA or whatever evolution. Hence we are constantly revising this plan all week long. We have to coordinate the schedules of all our ground stations, find who can be awake at the right time, and still have 2 more chances to turn it off after that. Each change of 5 minutes to the evolution completely changes the ground station we need and all our planning.

Meantime, NASA has to man the consoles, and DOD has to provide a 24 hour operator at their console to talk to NASA to talk to me. Then we send the commands, and have to report it to all concerned. Meanwhile NASA has to plan contingencies in case we fail to get the switch turned off from the ground. They have to include the plan in their Astronauts procedures to take time out of their EVA preparations (getting their suits ready) to include them going over to the HAM radio and going through 74 steps in a 5 page procedure to send the OFF command themselves.

Yes, 74 steps... Just to send the DTMF code 123456, because you have to have a procedure for the crew to turn on the radio, set the channels, tune the radio, set the controls, verify operation, etc, etc... This requires 15 minutes or more and has to be done before they get into their space suits. Which takes 3 hours. This means we had to have exhausted all three of our ground opportunities prior to that 3 hours, so we have to attempt to send the command 6 hours prior to EVA. Many times that is in the middle of the night over the ground station of choice, and since we had to do this for every EVA, every docking and every use of the robot arm, you can see why no-one is going to let us do that again. It wore everyone out.

DOD had at least 6 people probably 1/4 time on this project over 3 years, that is about $500,000. And that had nothing to do with actually building the hardware. That is just "oversight and management" overhead. Presumably if we didn't have all the man-safety issues due to the 2 W transmitter, this effort would have been much less involved.

But it all makes sense. NASA must assure the safety of the Shuttle ISS system, and these procedures all make sure that the material, plans, procedures and operations are thoroughly reviewed and are as safe as possible".

Bob with his PCsats is not alone in having to satisfy such safety requirements. The ARISS team too will have had to confront such issues from day-1. Interestingly there were no further questions on this topic!

AMSAT pioneer becomes a silent key

The history of AMSAT doesn't go back much further than Oscar-1. Launched on December-12, 1961, we will never see its like again. Oscar-1 was built and tested in real amateur radio basement workshops, its battery lasted for just 3 weeks but it proved a concept that is still unfolding today, nearly half a century later. One of the amateurs who played a role in Oscar-1 was Harley Gabrielson K6DS. Harley passed away on Sunday January 14, 2007. He was 83. He maintained a close association with AMSAT for many years passing on his skills and knowledge to others. Harley built the keyer in Oscar-1 which produced its characteristic "hi, hi, hi ....." as it orbited in the footsteps of Sputnik. Those of us who have followed can only guess at the level of excitement in those amateur workshops as Oscar-1 and the other early phase-1 amateur radio satellites took shape. Visit the AMSAT-NA web site for a fascinating overview of the early days of the Oscar program. Thank you Harley, hi, hi.

Pehuensat-1 given an Oscar number

Bill Tynan W3XO, AMSAT OSCAR coordinator, announced in mid-February that Pehuensat-1 will hence-forth be known as Pehuensat-OSCAR-63, or PO-63. Pehuensat OSCAR- 63 has been welcomed into the family of Amateur Radio Satellites and it is hoped that it will fulfil its intended mission of furthering education and increasing interest in the Amateur Radio space program. AMSAT Argentina is to be congratulated for building, testing, launching and commissioning this new Amateur Radio satellite.

Falconsat series show promise for the future

Falconsat-3 (FS-3) is the latest in the series of satellites built at the US Air Force Academy. It is presently scheduled to be launched on March 8 from Cape Canaveral. USAFA Space Systems Research Centre satellites are science oriented and university class. FS-3 carries two space weather plasma detection experiments along with a micro pulse plasma thruster attitude control experiment.

The objectives of the program are to do real science and educate USAFA cadets about space systems design, construction, testing, and operations. About 40 senior cadets are in the program each year. Falconsats are operated from the ground station at the US Air Force Academy near Colorado Springs. Once in orbit, FS-3's mission is to collect data from its experiments and provide cadets in the Space Operations major an actual space ops experience. Astronautics major cadets will analyse telemetry and make operations decisions.

Now we come to the really good bit. Additionally FS-3 carries an Amateur Radio transmitter and receiver with a downlink at 435.100 MHz. Modulation is GMSK at 9k6 with faster bit rates available. The Amateur uplink is in the VHF band and the frequency will be made available when FS-3 reverts to Amateur radio mode. After the primary science mission is completed, the satellite will be transferred to the USAFA Amateur

Radio Club and operated as an Amateur Radio satellite. It can function much like AO-51 in either FM voice or digital store and forward configurations. During the first few weeks in orbit FS-3 will be commissioned, which includes uploading software and testing all functions. During that time the Amateur payload will also be exercised. The primary avionics in FS-3 are from SpaceQuest with additional modules built by cadets and faculty at USAFA and contractors. Software modules are from BekTek, SSTL, and Colorado Satellite Services, with additional software by cadets and faculty at USAFA.

The basic structure is a 60 cm cube . There is a 3 metre long gravity gradient boom that will be extended from the 'top' of the satellite when it is safely in orbit. That will make it look similar in general shape to the highly acclaimed UoSat series from the University of Surrey. On the 'bottom' are the pulse plasma thrusters and various antennas including an array of S band patch antennas provided by S&L Technologies of Orlando along with omni antennas for S, V and U bands.

The USAFA ground station consists of two complete units with individual masts on the roof of the classroom annex building. Antennas include 1.8 m and 3 m dishes and Yagis. Rotators are the heavy duty MT-3000 and MT-1000 from M2. You may recall that the first USAFA satellite, Falcon Gold, went into geostationary transfer orbit and measured the strength of GPS signals from well above the constellation. The results showed signal levels were adequate to warrant further experiments and in part lead to the GPS experiment on AO-40 and other satellites. Falconsat 4 and 5 are in the design stages now. Each is expected to carry an Amateur Radio transmitter and receiver in addition to their primary payloads.

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Spotlight on SWLing

Robin L. Harwood VK7RH

In late February and early March, I had problems with my hearing, when my Eustachian tubes blocked my eardrums. This distorted my hearing and was extremely frustrating because I could not listen online or on my receivers. All I could do was read and just recuperate. It has almost returned to normal as the anti-inflammatory medication has slowly done its work. It appears that somehow I developed fluid behind the eardrums.

Before my hearing temporarily packed it in, I did manage to hear an unidentified station on a channel normally occupied by transatlantic aero communications. Yes, I was using a remotely controlled receiver via the dxtuners website and was not really looking for anything. Another user had punched up the channel and I was intrigued to hear this station, broadcasting unusual music, probably from around the Horn of Africa (Somalia, Middle-Eastern). There was an absence of announcements and the signal went dark about 5 minutes after I tuned in, that is from 0440 to 0445 Z. I also think that it was on LSB, because I could hear the aero traffic on the other sideband. It probably was an error by a bored technician and speculation was that it was a clandestine station broadcasting to this troubled region. There have been frequent reports of a few clandestine stations operating between 5 and 5.5 MHz. Naturally I tuned in the next day at the same time yet the channel was dominated by the usual standard USB transatlantic HF aero traffic.

Propagation slowly seems to be improving and now signals are starting to appear during our daytime hours. It is going to be interesting with the marked reduction in shortwave broadcasting output, particularly to North and South America. Africa and the Middle East will continue to be targeted, whilst audiences in the developed world are shrinking. I did see a report that the BBC was even considering dropping broadcasts in Chinese. It was unclear if this was economic or because of the constant jamming from the so-called "Firedrake" signals. The Firedrake signals seem to be everywhere.

The Americans caught us out when they brought in daylight saving three weeks earlier than they normally do, on the 11th of March. This was enacted in legislation in 2005 but was largely ignored by the American public and they were caught off-guard by its implementation. The legislation states that daylight saving will revert to standard time on the first week in November. Canada also aligned itself with the alterations except in VE5.

Don't forget you can forward me news and loggings at vk7rh@wia.org.au or snail mail to 20/177 Penquite Road, Norwood, Tasmania 7250.

ar

Silent key

Helmut Neumann VK3CHN

Helmut Neumann VK3CHN became a Silent Key on 7 September 2006, after a long illness

Helmut first gained his licence in 1968 in Germany with the call sign DC8IP. After migrating to Australia, he obtained an Australian Amateur Limited Licence with the call sign VK3XIP, then in 1985, he was upgraded to the full call of VK3CHN.

He had worked three years with Lufthansa, and then for nineteen years with Ansett Australia Airlines maintaining aircraft simulators, before retiring in March 1992.

Active on the VHF and HF bands, his real passion was for those HF bands that would allow him to maintain regular contacts with amateurs in his country of birth.

As a founding member of the Sunbury Amateur Radio Group (S.A.R.G.), Helmut greatly enjoyed the company of his local fellow amateurs, and was keen to learn about any new aspects of his hobby.

Submitted by
Noel VK3YNW

QSLs from the WIA National QSL collection

Ken Matchett VK3TL, Hon. Curator
(03) 9728 5350, wiaqslcollection@wia.org.au
4 Sunrise Hill Road, Montrose Vic 3765

Two Old Timers open a treasure chest

Pre-war QSLs and those sent in the late 1940s when radio transmissions resumed after the war are becoming ever rarer. So we are particularly grateful to Old Timers for their contributions of QSL cards.

Old Timer L. F. ('Poly') Clark VK7CK was very active in pre-war days. Nearly 3000 valuable QSLs were kindly donated by his son, Frank, who now uses the same callsign. How interesting to look at some of the names on these old QSLs! Names such as really big DX-ers like Alan Brown VK3CX and Jack Anderson VK3JA, the QSL manager Ray Jones VK3RJ and the famous radio pioneer Max Howden VK3BQ who, in 1924, was the first VK to make a two-way QSO with the USA. There was also a card from Len Moncur VK3LN, who was an early TV experimenter.

The QSL VK3HM (November 1932) was there too. This is the QSL of what is most probably the earliest Australian XYL, Mrs E.L. Hutchings. Poly had also received her daughter's QSL. Marjorie Hutchings VK3HQ is featured on one of the world's earliest QSLs showing a photograph of the operator. This, incidentally, is a photo of a most attractive young lady, and at the time drew the attention of American radio magazines.

In addition to VK contacts there were several DX cards such as HAF8D from Hungary. (This prefix later gave way to HA but was again used fairly recently for special issue QSLs of that country.) The now deleted countries such as Danzig (YM4ZO) and Newfoundland VO (counting as Canada after April 1949) as well as J (later to become JA after the war) were there with many others.

Bill Hall VK2XT is another Old Timer who has contributed QSLs to our Collection over many years. Although 94 years young, Bill is still active on the bands. He gained his licence in July 1930. His stack of some 2000 QSLs contained hundreds of QSLs from the late 1940s. As well as pre-war QSLs sent by licensees (and sometimes by 'pirates') Bill included dozens of early SWL reports. In those days SWL reports from overseas were keenly sought by DX hunters. These might have station

MARJORIE HUTCHINGS "Bryn Avon"
CALLAWADDA, VICTORIA, AUSTRALIA.
VK3HQ
To Radio VK5EQ Ur. XTal Sigs. QSA 5 R. 8
at Here on 14/1/32 Xmitter 5 Tube CC Input
when working you was 25 watts. Antenna
Receiver 1 V 2 Remarks
M.L.H

This QSL drew the attention of American radio magazines

calls such as VK2QSL, VK4TRBB (the SWL's initials) and VK3AFS (a callsign no different in appearance to one sent by a licensed operator). Many listeners were registered and became 'official listeners'. The callsign ZL253 was, for example, registered by the NZART. Many of these QSLs give valuable historic information about receivers and antennae.

Reading the information on the QSLs sent to these two Old Timers can make us appreciate the level of sophistication that we enjoy today. Interesting, for example, are the signal reports of those far off days when Q signals were used much more frequently than they are today. Many have either fallen out of use or are used very rarely, such as QSA (readability), QRI(tone), QRG (frequency) and even QRL as in the expression: 'Jack is very QRL (busy) of late'. Since nearly all equipment in the early 1930s was 'home brew', operators of their 'experimental stations' used abbreviations such as 1V2 (receiver with one stage of RF, a detector and two stages of AF amplification) or even O-V-1, a set that lacks RF amplification and which would be suitable for headphone reception only.

Many receivers were powered with dry cells but occasionally one boasted that he had a '3 tube AC'. The transmitter was invariably a three or four stage CC (crystal controlled). Sometimes a TPTG (tuned plate, tuned grid) took the place of a crystal. Many operators ground their own crystals to the required frequency and used frequency doublers for higher frequencies. Equipment to check the frequency of one's transmitter was a compulsory condition of gaining a transmitting licence and we all had great respect for the RI (Radio Inspector).

Receivers were often a three tube TRF (tuned radio frequency) and, like transmitters, were described by naming the valves used in the various stages of amplification or rectification. For example, we might read on a QSL card: 58-57-56 or perhaps 47 CO, 47FD, 46PP (47 valve crystal oscillator, 47 frequency detector, 46 PP push-pull amplification).

The antennas of the early 1930s were frequently half-wave Hertz (as distinct from the Marconi antennas with a 'grounded antenna' configuration) or a 'zepp' (a long-wire type whose name is derived from the fact that a trailing wire was used as an antenna in the German zeppelins). Although Yagi invented his antenna in 1948, rotatable types like this did not gain popularity until the 1950s.

Mention, too, should be made of the fact that considerable attention was given in those days to the 'counterpoise' or earthing of the circuit by a series of copper radials radiating from the base of the antenna or by suspending a length of wire parallel and beneath the radiator.

continued on page 43

Contests

Phil Smeaton VK2BAA
Contest Manager

Contest Calendar April 2007 - June 2007

April	7/8	Marconi Contest	(CW/SSB/RTTY)
	7/8	SP DX Contest	(CW/SSB)
	7/8	EA WW RTTY Contest	(RTTY)
	8	QRP Hours	(CW/PSK31/RTTY/SSB)
	14/15	Japan Intl. DX Contest	(CW)
	14/15	Yuri Gagarin Intl. Contest	(CW)
	21	Holyland DX Contest	(CW/SSB)
	21	TARA Skirmish Digital Prefix Contest	(PSK)
	21/22	YU DX Contest	(CW/SSB)
	28	**Harry Angel Sprint**	**(CW/SSB)**
	28/29	Helvetia Contest	(CW/SSB)
	28/29	SP DX RTTY Contest	(RTTY)
May	5/6	ARI Intl. DX Contest	(CW/SSB/RTTY)
	13	VK/trans-Tasman 80 metre Phone Contest	
	12/13	CQ-M Contest	(CW/SSB)
	19/20	Baltic Contest	(CW/SSB)
	26/27	CQ WW WPX Contest	(CW)
	27	VK/trans-Tasman 80 m CW Contest	
June	9/10	ANARTS WW RTTY Contest	(Digital)
	9	Portugal Day DX Contest	(SSB)
	9	Asia-Pacific Sprint Contest	(SSB)
	16/17	All Asian DX Contest	(CW)
	23/24	Marconi Memorial HF Contest	(CW)

Welcome to this month's Contesting Column.

A (Woeful) Tale of Twin Cities (with apologies to Charlie Dickens....)

Last year's CQWW CW contest in November went much better in VK6 than my first contesting attempt from these fair shores in Albury-Wodonga (also known as the Twin Cities) during CQWW CW in 2004. I operated in CQWW CW 2006 as VK2BAA/6 from the shack of the Perth Northern Corridor Radio Group VK6ANC. Thank you again, Gentlemen for your hospitality and generosity to allow me to participate in the contest from Zone 29 – I had a great time. This kind act came out from my request posted to the VK Contest Club email reflector, which serves to bring contesters together from around Australia. The VKCC goes from strength to strength and is to be recommended for all contesters in VK. Go to www.vkcc.com

For the first effort in 2004, assembling the station involved an Icom IC-735 along with a laptop. I'd been kindly lent a suitable table for the shack by a work colleague and a next door neighbour had given me an old dining table set along with four chairs – one of which got commandeered for the shack. A trip to a local retailer secured some wire, connectors and coax, so I was almost ready to get on the air with a few days breathing space prior to the start of the contest.

The IC-735 refused to operate properly upon powering it up. I could only get 10 watts out of it on 10 m and 80 m – sometimes it would work perfectly well whilst at other times the rig refused to transmit regardless of how hard I tried to persuade it. The rig then decided not to bother at all and failed completely. I had very few tools available and no circuit diagram so fault finding was limited to 'having a look and prodding internal bits within the rig' in the hope that it might spring back into life after suffering from a dry joint induced by the recent travelling. With my somewhat rusty fault finding skills having been expired with little glory, at the eleventh hour I managed to borrow a TS-530 from my local Twin Cities Radio and Electronics Club in Albury. The rig produced about 40 watts of output, so reining it back to 5 watts for QRP use was not a problem. Trouble was, as the rig had a valve final it required grid block keying for CW (which my simple passive single transistor interface couldn't manage), so I scratched around for enough bits to build an active two-transistor interface to get me away.

I had ordered a Hustler 5BTV vertical antenna a few weeks prior to the contest and this arrived with two days to spare. The antenna was soon assembled and mounted at ground level with a small number of radials per band. I acquired two ratchet straps (similar to those utilised to secure loads on trucks) and attached the vertical onto a handy sturdy wooden pole in the back garden. The coax was terminated and run back to the shack. After a few journeys up and down the garden to make adjustments to the antenna and to take physical measurements of each antenna section (as it is a multi-band antennae with traps), I regretted not having an antenna analyser – would've saved a lot of time and effort!

Next, after getting my contest software to run happily on the laptop and key the rig properly, my IC-735 required some repairs to get it to work reasonably (albeit intermittently) as I might need a back-up rig. An hour with the soldering iron solved the problem, as a couple of dry joints were the cause of the strife.

With the IC-735 now working to a fashion, the laptop set up with logging software and a resonant antenna, I was ready to contest. Or so I thought....

Fifteen minutes into the contest, the bands went quiet. The VSWR was checked and found to be healthy earlier that day, but a short while later it was evidently very high indeed. After much searching, it transpired that next door's cat had chewed the coax, damaging the braid and some of the centre insulation! Making a mental note to buy a large carnivorous canine of some sort, a hasty repair was made to the coax and I'm back on the air with an hour of contest time lost.

With all the contesting excitement going on, the kitchen fridge had evidently decided that it wasn't getting enough attention and decided to put on a show by tripping the house power. It was a simple enough job to get the power back on, but the smell of burnt electrical components from the fridge was horrendous, so it needed to be put outside the house! More time lost.

Back to the rig to check the coax repair – still no signals to be heard – in fact no audio at all! After a bit of head scratching, the volume control on the TS530 was found to be suspect. I ripped open the rig and found a dry-joint on a wire connected to the volume pot, so at least it was an easy and quick repair.

I finally got onto 20 m but the antenna really showed its limitations as many stations are reasonably audible but QRP power could not do the job of getting heard over the noise floor of the band under the busier than usual CQWW band occupancy conditions. Timing and pure guile were the only tools that got the QSOs.....

Murphy struck again. The rig refused to change-over from receive to transmit. After much fault finding, it transpired that the connector that combines the computer interface lead and the keyer interface lead into the rig had failed open circuit. It was brand new – not two days old. Hence, the external keyer was removed and the computer plugged-in directly. The rig went over to transmit just fine, but flexibility was lost as manual keying was not now available.

I was indulging in a bit of 'search and pounce' (S&P) on 20 m when the XYL came into the shack. The evaporative air conditioning unit on the roof had not only failed (but it wasn't switched on!) but had also decided to cascade water all over the roof at an alarming rate. More time was lost while repairing the water feed pipe with a bit of garden hose and two hose clips.

I struggled for a while to make any headway at all after that, but the trials of the contest still weren't over as the TS-530 died on 10 m completely with no Rx or Tx at all. Wobbling the band change switch in an effort to encourage the rig into action brought no beneficial results, so I worked my way down the bands until I found one which the rig worked and one that people could (just about) hear me. Unfortunately, the rig audio then failed so I turned the whole lot off and went to bed as the backup IC-735 had also decided to be mischievous again.

I had made a total of some 50 or so QSOs over 48 hours, which was somewhat less than I had hoped. I had planned plenty of time for pre-contest checks, but sometimes things seemingly conspire against you! The IC-735 has now been fully serviced (and relegated to a stand-by rig) and the TS-530 has been repaired (a series of dry joints re-soldered) then returned to the Club with my thanks.

I fared better in the 2005 contest (with a replacement rig!) gaining a reasonable position in the Oceania QRP listings. However, for me, this learning curve is really what contesting is all about – making improvements, setting goals and trying to better your own performance.

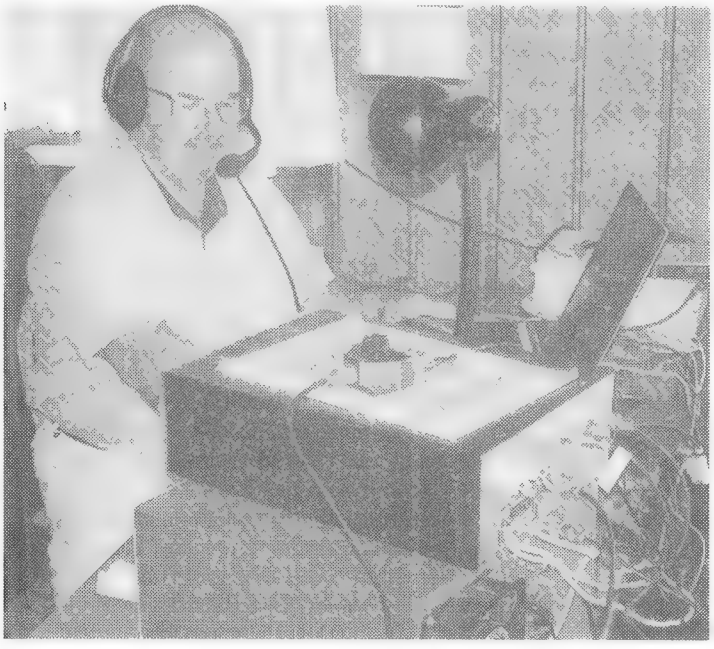

Photo 1. Eddie De Young VK4AN operating VI9NI. Photo: VK5PO

Photo 2. Vince VK7VH is rightly delighted with his trophy! Photo: VK2BPL

Some people see contesting as a somewhat undesirable side of amateur radio activities, usually due to band occupancy making rag-chewing difficult. But why not try it for a weekend – you might just like it and you'll find out why it is that many of us keep coming back for more. If you do give contesting a try, thanks for being open-minded and willing to see what all the noise is about on the bands.

Don't take my experience of yesteryear as a 'usual' contesting occurrence, as it is certainly not typical of what can be expected. Prepare yourself and your station extensively if your intention is a serious entry and do a bit of homework to get the correct information exchange and then set yourself some goals – maybe 50 QSOs or even 100 QSOs, or possibly try to work 50 countries - whatever you feel comfortable with – and try to achieve that during the contest. When was the last time you had 50 QSOs or worked 50 countries in a weekend? Next contest, raise the goal a little more and test your skills and your station again to maximise your score – I would be delighted to know how you got on. Murphy may strike as in my case, but I learnt a lot from the experience and have planned my contesting differently as a result. There's not much I can do about the household appliances though!

On the subject of contest planning, the VI9NI team had their trials and tribulations during the visit to Norfolk Island, but the true Aussie spirit shone through to make repairs and return to the battle with gusto when faced with any problems that arose. Photo 1 shows VI9NI team member Eddie De Young VK4AN working one of the many pile-ups from Norfolk Island.

The VI9NI trip was my first meeting with Eddie and I couldn't help but be impressed with Eddie's fortitude towards problem analysis, formulating a plan for remedial action and his dedication to a job well done. Eddie was a major part of the planning team for the trip and had made allowances and contingency for all manner of 'typical' problems that may occur. I have no doubt that without Eddie's evident experience and approach we'd have been limited as a team as regards our performance. Eddie certainly got his planning right, as we made many thousands of QSOs during our time on the island.

Paul Linsley VK2BPL writes with information from the Westlakes Club. Photo 2 shows Vince VK7VH holding the Westlakes Cup for 2006 for winning the Advanced/Standard Level and he is rightly pleased with the result! Well done Vince! The Westlakes Cup deserves support as a home-grown and interesting contest, so how about writing the date in your diary and getting on-air for the event on the 22nd of September 2007. The rules will be published in AR prior to the event, but can also be found on the Westlakes Club website. Vince will be one of the bonus stations this year as will Jess VK2FJES, featured recently in this column as showing the elders how to do contesting. The Westlakes Club have an enviable record in providing the next generation of radio amateurs access to facilities and training, in addition to a myriad of Club activities to introduce and tempt newcomers to the broad church of Amateur Radio – including an active and successful contesting group with an enthusiastic selection of 'Elmers' for guidance and reference.

If you have any contest related material for inclusion within the column, topics that you'd like covered or even some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK2BAA Phil Smeaton

Results CQ WPX CW Contest 2006

World Top Scores - Tribander Single Element			
World No 1	7 MHz	VK6DXI	1,638,524
World No 9	All	VK6AA (VK2IA)	3,233,572
Single Operator – Australia			
VK6AA (VK2IA)	All		3,233,572
VK7GN	All		177,030
VK4ADF (HA3LN)	All		96,064
VK6DXI	7 MHz		1,638,524
Low Power			
VK8AV	All		468,568
VK4TT	All		80,703
VK3KE	All		51,062
VK3FM	All		2,407
VK4BUI	14 MHz		283,529
QRP			
VK2NU	All		2640
Multi Op, Two TX Oceania, 2nd place			
VI9NI	All		3,063,995
(Ops VK4AN, VK2BAA, ZL2IFB, VK4FW)			

QSLs Collection *continued*

Miniaturisation was an unknown term: components were bulky, especially the large variable capacitors, the long screen grid voltage divider and the aluminium electrolytic condensers.

Gradually more and more commercial gear came on to the market, which offered the constructor a superbly designed and economically priced piece of equipment that he could not possibly compete with. Equipment such as the Geloso 'Front End' of the early 1950s virtually took over one's task of building an r.f. amplifier. The great popularity of superhets and the beam tetrode revolutionised amateur radio and gave rise to receiver selectivity and transmitter power output undreamt of in the early 1930s. But it is great, isn't it, to be able to look back at the past with our old QSL cards and to be thankful to those experimenters who made it all happen.

More acknowledgements next month.

A warm 'thank you' to all our contributors.

73 Ken

Results of the 2006 Jack Files Memorial Contest.

73 John Spooner VK4AJS
Contest Manager
Email - vk4ajs@wia.org.au

A good response was shown to the new contest format in 2006. Changes were made to try and encourage more people to participate and to bring the contest to more of a national level and not just a VK4 based contest. With this in mind, it is good to see that the 2006 overall winner is a VK2 station. All feedback received was positive, so hopefully word will spread and we will see even more stations joining in 2007.

The delay in releasing the results was due to having to recalculate the final scores for quite a few stations. I have done so this year because the scoring was new and several operators had not calculated their totals correctly. Next year, I will try to have an example log placed in AR so as to give all operators a better idea.

The results for the Jack Files 2006 are as follows.

Overall Winner

VK2LCD Chris Meagher with 12702 points

State winners

VK2	SSB S/O	VK2LCD Chris Meagher	12702 points
VK2	CW S/O	VK2CTN Chris Thompson	80 points
VK3	SSB S/O	VK3AAK Michael Coleman	9900 points
VK3	ALL MODE S/O	VK3TNS Stjepan Nikolic	2312 points
VK3	CW S/O	VK3JS Ian Godsil	1980 points
VK4	SSB S/O	VK4HFO Tim Wright	10203 points
VK4	ALL MODE S/O	VK4TJ John Kirk	4300 points
VK4	CLUB STATION	VK4BAR	5859 points
VK5	CW S/O	VK5BUG David Westcombe-Down	20 points
VK6	SSB S/O	VK6NU John Coleman	3360 points
VK7	SSB S/O	VK7VH Vince Henderson	2160 points.

Congratulations to the winners and a big thank you to all who participated and submitted logs for the 2006 contest. Certificates will be sent to the winners promptly.

There were a lot of stations who did not submit a log for 2006. I hope that a few of these stations will enter this year. There were a lot of close finishes so to all who sent in logs please try again this year and maybe you will be rewarded for your efforts.

The logging software by VK3AAV is a great freeware product and I would encourage all to use this product in the future. Also extra congratulations to the Foundation Licence operators who participated.

A date for the 2007 Jack Files Memorial Contest will be confirmed very shortly.

2007 VK/trans-Tasman Contests

Bruce Renn VK3JWZ

The VK/trans-Tasman Contests are on again, this year!

There are four Contests to choose from, between May and July:

- 12th May, 80 m Phone
- 26th May, 80 m CW
- 7th July, 160 m Phone
- 21st July, 160 m CW

The Phone Contests run for up to 6 hours, and the CW Contests up to 5 hours, commencing 6 pm EAST (0800 UTC).

Everything you need to know about these Contests can be found on the website at:

http://home.iprimus.com.au/vktasman

This includes Rules, auto-logging programs specifically written for these Contests, downloadable hand log sheets, results and analysis of 2006 Contests with photos of winners.

Prizes include a bronze trophy for the Winner on both bands, and laminated certificates for Winners and place-getters in all categories.

Scoring is structured to provide a level playing field for all, regardless of your QTH and time-zone.

So, note the dates in your diary, get your equipment ready in advance, and give it a go!

These Contests are run for YOUR benefit and enjoyment, and their future continuation will depend on the level of participation.

Note: The Contest Manager will be unavailable until 1st June, so results for the 80 m Contests will not be published until about the end of June.

Barcfest 2007
Saturday May 12 1000 hrs
Mt Gravatt Showgrounds (QLD)
www.qsl.net/vk4ba select Barcfest
or ring 3343 7247 for all information

MRDC HAMFEST 2007
1000 Saturday 12 May
Brentwood College
Watsons Road Glen Waverley (VIC)
Info and booking
9705 1051 9702 1199
www.mdrc.org.au

DX – News & Views

John Bazley VK4OQ
P.O. Box 7665, Toowoomba Mail Centre, QLD 4352.
Email: john.bazley@bigpond.com

Undoubtedly the BS7H operation will provide a large number of DXers with the opportunity to 'tick off' one more wanted entity. See the article on next page. Although this DXpedition has been promoted as the "most wanted", undoubtedly that position has now been replaced by KH8 Swains Island, which had not been declared a new entity at the time of the last survey. Having said that there will be plenty of people who will be trying to get a QSO with both!

The old saying "you have to be able to hear them to work them" is as true as ever. There has recently been a two-part article in the National Contest Journal (published by ARRL) on this very point. The essence of the articles has been to reduce the extraneous noise level relative to the signal that you are trying to copy. To oversimplify the article, one suggestion detailed is to insert headphone speakers into a pair of commercial ear-muffs. I can say that it does appear to work and I would recommend anyone interested in VERY weak signal reception to read the articles.

FR. Gildas TU5KG (ex FT5WL and FT5XP), is heading back south to the southern Indian Ocean on a new work assignment. He has received new calls to be used for 2007. He has been issued FT5XQ (for Kerguelen Island) and FT5WM (for Crozet Island) and can use either of those calls while Maritime Mobile as FT5XQ/MM or FT5WM/MM. Gwenael F4EFI, says Gil is also expected to be on from Reunion Island as FR/TU5KG from April 15 and then returning to France. QSL via F4EFI, either direct or via the bureau.

6W and J5. Peter HA3AUI is heading back to Africa at the end of the month. Activity began around February 25th until about April 30th or possibly longer. He will be operating very close to the Senegal/Guinea boarder as 6W2SC and J5UAP, depending on which side of the line. Peter will be on all bands, mostly digital with some SSB. He will soon have a Web page at http://cqafrica.net/ . QSL via HA3AUI.

3B7. FSDXA St. Brandon DXpedition – Bulletin No 3. Two members of FSDXA recently visited Mauritius to set up logistics for the September operation from St. Brandon. They are pleased to say that all the necessary permits and licences are in hand, and a suitable ship has been located to take the team members and something like six tonnes of equipment to the island. There is still a lot to be done, but they are all looking forward to putting another rare one on the air.

3B6 Newsletter. The 2007 DXpedition to Agalega Islands by Witek Onaczyszyn SP9MRO. On February 21, 2007, the decision to suspend the (Polish) expedition to 3B6 Agalega was taken. They will decide on March 15 whether it is only postponed or cancelled. The decision is due to the enormous costs of the expedition that have considerably exceeded the estimated budget.

The expedition was supported by PZK, SP-DX-C, G DX Foundation, EU DX Foundation and institutional sponsors as well as other hams from a few countries. They would like to thank all of those. Their main sponsors have decided that the period between receiving the licences and the time set by Mauritius' government to start the ham's activity is too short.

Due to all of that the expedition's members are checking the possibility to postpone it until later in 2007 unless it coincides with the FSDXA expedition to St. Brandon in September.

All of the donations will be immediately returned in the same format that they were paid. They hope that, if the expedition to Agalega is on again at the end of this year, their kind donors will be able to support us once again. They would like to thank those who supported their actions, especially those from Mauritius. Simultaneously, they apologize to all of those who counted on a QSO in March 2007. Team leader Witek SP9MRO sp9mro@godx.eu or wonacz@box.zag.pl

FK. Tony 3D2AG is currently operating from Noumea, New Caledonia, as FK/FO5RK until end of April. He can be found mostly on 20 and 40 metres CW. In May/June he plans to go to Rotuma Island and operate as 3D2AG/p. There is a shortage of fuel on the island and the solar panels he used in the past (1992-2001) apparently no longer work. Tony is looking for someone or a DX club who might be able to help him obtain a few solar panels (12 volts) to charge his battery. He is also looking for a small beam. If you can help please contact Tony via his email address on QRZ.COM.

A2. Frosty K5LBU is arranging a DXpedition to Botswana for July of this year. So far he has one CW operator and one SSB operator and is looking for another two to four more operators. They will be arriving in Johannesburg, South Africa on July 4th and hope to be operating from July 5-20. For more information, you can contact Frosty at Visalia or via email to frosty1@pdq.net

XV. Rolf SM5MX has acquired an old callsign of his, XV9SW, to use from Hanoi, Vietnam, until April 30th. He plans to be on 20 and 15 m CW but says noise levels in the city make operating barely possible. QSL to his home call. He returns to Sweden in August.

YK1BA. Saad N5FF will be arriving in Damascus, Syria, April 9th and should be QRV as YK1BA again from April 10-27, returning to Texas on the 28th. Saad says that as usual the purpose of the trip is not a DXpedition, so his operating will be spotty. Still, he hopes to be on the air at least three to four hours a day. Saad says, "With the current band conditions and my typical operating times, I suspect that I will spend most of my radio time on 30, 40 and 80 metres. However, I will operate on whatever band (10 - 80) and mode that has the best propagation at the time. Most probable operating times are between 2000-2300 UTC or between 0200 - 0500 UTC, and possibly some occasional activities between 1200 - 1400 UTC. I will be active on SSB, CW and RTTY." QSL via N5FF.

V51AS. Frank has had a very difficult time with his mail. In an attempt to make it easier, he has established an alternative route in Germany. From March 10th 2007 you can send your direct QSL request to: Frank Steinhauser, Schlossstr, Nr 68A, 82 140 Olching, GERMANY.

Happy Dxing.

Special thanks to the authors of *The Daily DX* (W3UR), 425 Dx News (I1JQJ) and QRZ DX for information appearing in this months DX News & Views.

For interested readers you can obtain from W3UR a free two week trial from www.dailydx.com/order.htm

Scarborough Reef

The expedition to the rarest DX entity

April 2007

Kan Mizoguchi JA1BK

Scarborough Reef has been at the Top of the "Most Wanted" list for many DXers around the world. There have, to date, been three operations since it was designated a separate entity.

The first took place at the end of June 1994 when the team, consisting of BZ1HAM – DL5VJ – DU1RAA – DU1OG – JF1IST – KJ4VH – OH2BH and OH2MAK, operated for 13 hours, making 2000 QSO's, all of which were on SSB.

The second operation by BZ1HAM – BZ1OK – KC6KOU – KJ4VH – OH0XX and OH2BH was in mid April 1995, when they were on the air for 80 hours logging 12000 QSOs.

1997 saw the third operation taking place between April 30th and May 3rd, netting a total of 13,154 QSO's. The following details were taken from the BS7H web page and give an idea of what is involved with this type of DXpedition and the difficulties facing the operators.

BS7H 1997

We arrived at Scarborough Reef on the night of April 30th, approximately 36 hours after our departure from the mainland.

At 0600 (2200 Z), right after first light, the patrol boat took off from the mother ship looking for the Rocks from which we were to operate.

According to a rough map that we had, there was supposed to be an open waterway, near a submerged ship wreck, which leads inside the coral reef. However, we could not find this waterway and ended up spending a considerable time going up and down the reef, occasionally rubbing the bottom of the small boat against the coral. We finally decided to enter the coral reef from the east. From there we went west and then south and found Rock #2, the place that was to become our main communication site.

Once a Rock was discovered, somebody had to remain at the spot with a huge sunshade umbrella so that it could be identified from a distance. Having found Rock # 2, N7NG decided to stay behind. The rest of us went on to look for Rock #1, which we found quickly. This time JA1RJU remained behind.

We were lucky to find the open waterway into the reef, thanks to a Filipino fishing boat we sighted using it. Having found it, the reef was now easily accessible regardless of the tide.

Every member of the team worked hard with one common goal in mind: To start transmitting as soon as possible. Antennas, rigs, power supply units and so on were quickly carried onto the platform and by 0449 Z, W6RGG called the first CQ, six hours since we located the reef! At the end of the day, we were transmitting from two Rocks. Fortunately the weather remained good (except for some wind) and we decided to continue activity through the night.

For safety reasons, the following rules had been agreed:

1. Rocks were to remain lighted at all times during the night,
2. Rocks to communicate with the mother ship on 144 MHz FM, every hour.
3. That there would always be two members on a shift.

These precautions were taken since there had been reports of pirates in the region, and boats could not approach the Rocks during the night.

Shifts were as follows:

Morning 0600 – 1200, afternoon 1200 – 1800 and night 1800 -0600.

The next day preparations began to transmit from Rock #3. Activity began at 0233 Z, May 1st on 7 MHz SSB.

We now had 3 stations active simultaneously though Rock #3 was not active during the night.

We had planned Low Band and RTTY activity during the last 2 days. However, after two days operating, we received a

message from Beijing on the evening of May 3rd, requesting us to QRT.

The equipment we used was:

Rock #1	Yaesu FT-920 Icom IC-706 Diamond HB9CV 50 MHz and R5Antennas, Suzuki SV-1400L (power supply)
Rock #2	Yaesu FT-1000MP FL-7000 R7000 Suzuki SV-2500L (power supply)
Rock #3	Yaesu FT-900 R7000 Suzuki SX750 (power supply)
Mother ship	Yaesu FT-1000MP GO-2KW R5

Evacuation started at 1400, two hours earlier than our initial expectation. Everything went smoothly and we were out of the region by 1600.

Our first QSO was at 0449 Z on April 30th with BA4CH, by W6RGG/Bob on Rock #2, and closed down at 0646 Z, May 3rd. The final QSO was from Rock #1, JA1RJU and JA2DDN on 21 MHz SSB.

Total operating time was 73 hours 57 minutes with the QSO totals:

Rock #1	4,584
Rock #2	6,111
Rock #3	2,459
Total	13,154

After years of waiting and with short limited DXpeditions in the past, the Chinese Sports Federation has won approval to authorize another assault on Scarborough Reef.

A multinational team of Amateur Radio Operators from Asia, Europe, and the United States is poised and prepared to ensure that every DXer gets a chance to make a QSO with this rarest of entities. We wish them luck and safe travels.

The 2007 Team

China, Representing the CRSA:
Chen Peng BA1HAM, Fan Bin BA1RB, David Chen BA4RF, Chen Fang BA4RC, Terry Liang BA7NQ

Representing the CTARL:
Ko Chih-Ta BV6HJ.

United States of America
Bob Vallio W6RGG, Tom Berson ND2T, Joe Blackwell AA4NN, Paul Pescitelli K4UJ, San Hutson K5YY, Mike Mraz N6MZ, Wayne Mills N7NG.

Singapore
James Brooks 9V1YC.

Italy
Max Mucci I8NHJ.

Germany
Christian Entsfellner DL3MBG.

Philippines
Eddie Valdez DU1EV

The Off Island Support Team
Paul Pai BV4FH, Tom Harrell N4XP, Don Greenbaum N1DG, Paul Hansen W6XA, Johnson Wong BV4DP, Christine Chiang BM4HSG (XYL of BV4FH).

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Silent key

Rick Warnett VK4KRW/P29KFS

Rick Warnett VK4KRW/P29KFS was drowned in a tragic accident in the Barron River near Cairns on Sunday 14 January 2007, doing what he liked, bushwalking with his good friends Nigel (VK4ZNQ/P29ZNQ) and Trish Quayle and their dogs.

Rick is well known throughout the amateur radio fraternity in PNG, Australia and overseas.

Rick went to Papua New Guinea in early 1975 and worked with the then Department of Civil Aviation later to be known as Civil Aviation Authority CAA. as a radio tech.

After many years with DCA he left and commenced work with Daltron, an Electronics and Information Technology Company based in Port Moresby. Rick worked in the service division which involved servicing and repairing a wide range of electronic equipment.

He then moved to a company called Pacom Communications where he worked as the national radio service manager.

A few years ago he survived a helicopter crash on Mt Wilhelm in the highlands of PNG. The pilot was killed but Rick miraculously survived. Yes, he was working on radio sites at the time.

In the ham world Rick was one of the main players in PNG. His first call in PNG was P29ZFS, then to allow him to work on HF, mainly on the PNG 80 metre net; he sat his CW and acquired P29KFS

He became involved with the PNG Amateur Radio Society; in fact he was the backbone of the society, and also was very active in WIA matters He was also involved with the ITU and IARU.

He was one of the main organisers in setting up many of the PNG repeaters including one on Mt Albert Edward at 14,000 feet.

He was very active on the VHF bands and had a friendly rivalry with Paul Linsley, P29PL now VK2BPL as to the number of countries worked on 6 metres. Rick also had an interest in MF and VLF bands along with satellite communications and radio astronomy. Rick, Trish and Nigel lived at the same QTH and spent countless hours building and raising a host of antennae from loops to dishes. Altogether a truly dedicated operator.

Many overseas hams first contact into P29 on VHF were with Rick.

Rick moved back tos Australia and settled in Cairns where he worked in the Avionics Industry.

Rick's other interests included many aspects of science, photography and bushwalking. He has walked along the Kokoda and many other tracks. Rick and his lifelong friends, Nigel and Trish returned to Australia in 2005 and started to explore Far North Queensland by 4WD. Rick along with Nigel and Trish also showed Doberman Pinschers on the dog show circuits.

RIP Rick – One of the good guys.

Submitted by Dale McCarthy VK4DMC / VK4SIX (ex P29MI)

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VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

Propagation conditions for the last month have been relatively quiet, so there's not a lot to report.

There have been a few openings in the south-east of the country, between VK3, VK5 and VK7, but not a lot has been reported from further afield. This season, in general, there seems to have been more VK7 to VK5 activity than I can recall in the recent past. Whether this is due to unusual propagation conditions, perhaps enhanced by the general drought in the area, or whether this is simply because a number of very capable weak-signal stations have set up at each end of the path, is the question.

The VK6 Albany beacons on 2 m and 70 cm have been heard several times in Adelaide, but have not reached much past the VK3 border. On the evening of March 6, the Albany beacons were audible in Adelaide and Wally VK6WG had some success. He worked Phil VK5AKK on 2 m (5x9+), 70 cm (5x9) and 23 cm (5x2); Steve VK5RU on 2 m (5x9), 70 cm (5x7) and 23 cm (5x6); and Peter VK5ZLX to the east of Adelaide for the first time on 2 m (5x5) – a distance of 1935 km.

VK-VHF Reflector

Last month saw the 10th birthday of the VK-VHF Reflector, another very valuable resource for the VHF/UHF weak signal operator. To quote from the NSW VHF DX Group web site:

The original idea for this email reflector came from Rod VK4KZR.

Guy VK2KU, acting for the NSW VHF DX Group, set up the first reflector on 20 February 1997 at Macquarie University, where it remained for three years.

Early in 2000 the VK-VHF Reflector moved to its present home at the University of New England in Armidale, NSW, with Gordon VK2DJG as administrator.

The focus of the VK-VHF Reflector is weak-signal work on VHF and above, using appropriate modes such as SSB and CW. The reflector caters primarily for the bands 144MHz and up.

The membership of VK-VHF includes most of the active VHF, UHF and Microwave stations in Australia, as well as other VKs who are interested but not active in this area, and also a number of overseas stations. Anyone can join - there is no cost.

To become a subscriber to the VK-VHF Reflector, visit the following webpage:

https://mail.une.edu.au/lists/cgi-bin/listinfo/vk-vhf

and follow the instructions there.

As with most discussion reflectors, the SNR can, at times, fall to very low levels. Nevertheless, there is a wealth of valuable experience available. Thanks to Gordon VK2DJG for running it so smoothly and for so long.

EME

After much success on 5.7 GHz, Charlie VK3NX has successfully adapted his dish to 10 GHz and made his first EME contact on that band. Charlie writes:

After more optimising/tweaking of the system, today (27/02/2007) I heard my echoes for the first time and this evening I switched my feed to vertical polarisation and tried a receive test with Alex RW1AW on 10 GHz. This went well and soon after, at 1230Z, a very easy QSO took place between VK3NX and RW1AW. CW signals were 559 / 559 both ways on 10368 MHz.

Equipment is a 3.7 m Sat TV dish with 0.7 dB LNA and 26 W at the feed using linear polarisation (adjustable V or H).

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur – VK7MO

WSJT, with the JT65 mode, is a useful tool for studying tropospheric scatter propagation as it averages the highly variable signals over 46 seconds for each reception period. Even so, tropospheric scatter can vary by 10 dB and more from one receive period to the next. To achieve a more representative figure, it is best to determine the median value over a number of receive periods. The median value has the benefit that it is not significantly affected by the occasional odd result due to meteors and is also consistent with the approach used internationally to measure tropospheric scatter propagation.

It has been found that a median value determined over 10 receive periods gives results that are consistent to within 2 dB. The median can be determined by listing 10 signal-to-noise readings measured by WSJT such as in the following example.

-19, -24, -12, -18, -14, -20, -18, -19, -18, -25

Then cross off the highest and lowest readings successively until there are only two readings left as follows:

-19, ~~-24~~, ~~-12~~, -18, ~~-14~~, ~~-20~~, ~~-18~~, ~~-19~~, ~~-18~~, ~~-25~~

In this case the final two readings are -18 and -19 dB, which should be split to give a median of -18.5 dB. If the final two readings are the same then this gives the median.

The normal reporting systems provided with WSJT can be expanded to allow the reporting of the Best, Worst and Median level using the following approach, which is based on the above example.

B12 W25 M18.5

The minus sign is deleted to allow the full report to be sent in the 13-character limit of text provided by WSJT. B is the best signal, W is the worst signal and M is the median signal. Once one has received the report from the other station, change the report to:

B12 W25 R18.5

where the R indicates that you have received the report from the other station.

It should be noted that as WSJT measures signal-to-noise ratio, it cannot be used to directly calculate the propagation loss unless one has a means of measuring the noise floor and knows all other system parameters. Still, at VHF and above, it provides a very useful relative measurement and one can learn a lot about the variability of tropospheric scatter from such measurements.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland – VK5BC

This month, I am overseas. So, I have asked John VK4FNQ to write a few notes for the column:

This sporadic 'E' season is the best I've heard for a few years. The band started to open up around October 22 with short openings into VK2, 3 & 5. It seemed to have a small footprint at times with a few QSO's made into VK3 with no beacons or 46 MHz TV heard.

One of the highlights was working the Jamboree Station at Elmore on Jan 3 and 10.

Following is a summary of my activity on six metres from Charters Towers from October 2006 to early March 2007.

QSOs with VK Stations.

	VK1	VK2	VK3	VK4	VK5	VK6	VK7	VK8
October	-	4	3	-	4	-	-	
November	2	23	13	3	5	-	-	
December	19	113	54	17	43	-	3	6
January	12	66	25	15	27	2	3	7
February	1	12	4	8	5	-	1	
Total	34	219	95	43	84	2	6	13

ZL Stations Worked/Heard

	ZL1	ZL2	ZL3	ZL4
November	-	-	1/0	1/0
December	2/0	4/0	8/10	1/5
January	3/1	0/1	4/4	2/3
Total	5/1	4/1	13/14	4/8

The following beacons were heard:

ZL2MHF - 19 times in December, 27 times in January and once in February

ZL3SIX - 24 times in December and 33 times in January

VK6RPH - Dec 6, Jan 1. VK6RBU - Dec 3, Jan 4, and Feb 3.

VK7RAE - Dec 25, Jan 26, Feb 5, and VK7RST Beacon Dec 24, Jan 13, and Feb 4.

VK8RAS - Dec 25, Jan 31, Feb 4, Mar3 and VK8VF - Nov 1, Dec 8, and Jan 21.

Apart from the many ZL openings, the only other international activity was hearing the New Caledonia FK8SIX beacon on Nov 1, Dec 26, Jan 24, and Feb 9.

Please remember to send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au.

ar

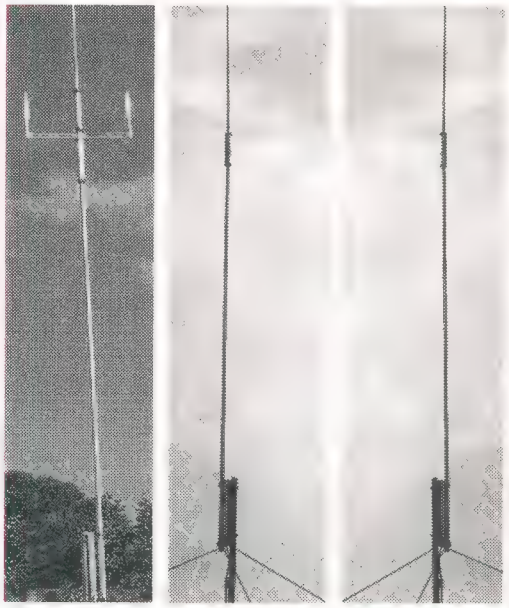
TET-EMTRON

Antenna Manufacturers

New

Tet-Emtron Vertical Range

TEV-4 TEV-3 TEV-3Warc



New Tet-Emtron Vertical Range

Features

- All Aluminium with Stainless steel hardware.
- No adjustment needed to main antenna.
- Light.
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- 1 kW PEP power rating.
- Can be ground mounted or elevated.

The new TET-Emtron Vertical range is designed with ease of use in mind. Tuning is done by the radials when the antenna is in its final position (where possible).The radials can either lay on the ground, be buried or hang from the elevated antenna. The antenna comes with a set of radials that has a resonant radial for each band. Further sets can be ordered from TET-Emtron if desired.

See the web site for more info and a complete dealer list.

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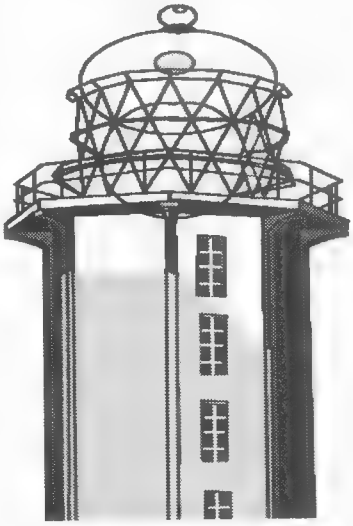
Ph: 61 3 5145 6179
Fax: 61 3 5145 6821
ABN: 87404541761

www.tet-emtron.com
Email: rawmar@hotkey.net.au

Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

International Lighthouse/ Lightship Weekend



0001 UTC 18th AUGUST TO 2359 UTC 19th AUGUST 2007

The International Lighthouse/ Lightship weekend has become one of the highlights of the year for amateur radio operators across the globe.

The event helps promote awareness of lighthouses and lightships. It highlights the need for their preservation and raises the profile of amateur radio.

This year's activity starts 0001 UTC on Saturday the 18th and finishes 2359 UTC Sunday the 19th August.

Lighthouse space is limited so activity does not have to take place within the lighthouse itself. The guidelines are that the amateur station should be set up at or adjacent to the chosen lighthouse, say in an adjoining field, in which case permission should be sought from the relevant land owners.

The event is NOT a contest, and the emphasis for participants has always been to have fun, without the pressure to make a large numbers of contacts.

For further details and to register for the event, visit http://illw.net/

The ILLW is an annual amateur radio event, sponsored by the Ayr Amateur Radio Group, Scotland
www.gm0ayr.org

Faces behind some of the voices at the Kellevie Fire Control Centre (see story on facing page)

Scott VK7FREK

Chris VK7FCDW

"Jamie" VK7KEG

Thomas VK7FTAA

Danny VK7HDM

WICEN Tasmania (south) activated for bushfires

Roger Nichols VK7ARN
WICEN Coordinator Tasmania (South)

The southern Tasmania WICEN group was activated at the request of the Tasmania Fire Service to provide operators for the Kellevie fire control centre at Cambridge.

The contact resulted from WICEN's work on the Tasmanian Safari Rally which shared communications management with the Tasmanian Fire Service and provided an opportunity to showcase WICEN capability.

The Kellevie fire was the first of the two (at time of writing) major bushfires on Tasmania's East Coast and included the Wielangta forest, familiar to the WICEN group through its work on equine endurance ride safety checkpoints over the past two years.

The fire involved 15,000 hectares, mainly forest in rugged terrain and stretching to the coast in the east. Tasmania Fire, Forestry and Parks networks were used on three mid band VHF frequencies and included airborne operations. Three radios were provided at the control.

The control centre radio room was manned by WICEN from Thursday 14 December through Friday 22 December, initially from 0700 to 2200, reduced to 0800 to 2000 for the last six days.

Two or three operators covered each shift. A long day shift took advantage of the relatively few people available during normal working hours with a shorter afternoon shift starting at 1700. A total of 235 operator hours was worked.

After the first day, the roster was organised to provide at least one operator per crew who had worked a previous shift. This minimised the briefing required from the Tasmania Fire Service personnel (and the initial trauma suffered by first timers!)

A few lessons have been learned from the activation which will be incorporated into the WICEN program.

Maybe it will be easier to get across the need for some of the more formal aspects of radio network operation – not a popular training topic! Fortunately, the WICEN group includes a strong core with emergency communications experience; and immersion in the deep end brings about rapid learning from attentive learners!

(In case you hadn't noticed – check the call sign hierarchy in this list of public service volunteers! Where would we be without the Foundation Licence?)

A job very well done by the following operators:

Allan VK7FAAE, Chris VK7FCDW, Denise VK7FDKM, Damien VK7FDNA, "Essie" VK7FMEL, Samantha VK7FSAM, Thomas VK7FTAA, Ben VK7HAH, Danny VK7HDM, Bruce VK7MBD, "Jamie" VK7KEG, Rod VK7TRF, Clayton VK7ZCR, Murray VK7ZMS, Dale VK7DG, Martin VK7GN, Ian VK7IR and Charles VK7PP.

Special recognition is due to Peter VK7TPE, Steve VK7FAME, Scott VK7FREK and Danny VK7HDM who, between them, covered almost half of the total hours worked.

Kellevie

Peter VK7TPE and Steve VK7FAME at the map board

Wanted – A Magic Wand

David Bell VK3FGE,
Box 348,
Porepunkah. Vic. 3740.

If only I had a magic wand! Just think:
Sun spots to order;
DX stations that pick me out of the pile-up;
Perfect CW from VK3FGE (perhaps not - even magic wands have their limits).
Ah! The mind boggles!

My latest need for a magic wand was during a long chat recently with Alan VK4EAB in Gympie, during the Sunday morning CW net. Alan is having to move into a retirement village soon, and is dreading it as (among other reasons) he will not be allowed to use his rig there.

If only I had a magic wand!

I said to my good lady (no, she is not always good!):

'Elayna, precious, they should do something to help operators in Alan's position'.

She raised her eyebrows and said 'They?'

I took the hint. 'OK, *we* should do something to help them'.

It was Elayna's turn to take the hint, so showing her usual interest in all I do she broke off her baking (despite my protests) and for the next two hours we taxed our brains searching for the best solution and how to make it work.

It seemed to us that, if Mohammed cannot have his own mountain under any circumstances, then invite Mohammed to come to your mountain. Yes, the idea is to make your shack available to operators such as Alan.

I understand that some clubs and individuals already do this. What I am trying to do is to highlight the need and encourage more people to help.

After all, our average age is probably around retiring age, so many of us could benefit in the near future (including you, good reader and yours truly) to say nothing of brownie points from Him up there…

Giving of yourself to help others can be very rewarding and generate a greater sense of self worth. Also, it seems to me that our hobby is becoming more of a social one than a technical one, if on-air conversation is any indication. The proposed system gives us a good opportunity for 'hands – on' social contact and friendship.

So! How do we reach these 'retired' operators?

For those who receive *AR*, or listen to the broadcasts it's easy. A regular advertisement placed in *AR*, and an occasional mention on the broadcasts.

For those with no contact with ham radio and already living in retirement villages there is likely to be at least a notice board and possibly a regular newsletter.

You need to visit the management personally and put your proposals to them. Remember something that will make any of their residents happier and more content to be there is surely in their own interests. Furthermore, having an outlet for his/her radio interest means a retired operator is less likely to cause problems for fellow residents or management by operating from his unit 'secretly'.

For smaller villages that do not have a newsletter, you could make up a leaflet and drop it into self-care and hostel units yourself. But do seek managements' permission first, explaining very politely what you are trying to achieve.

Elayna and I visited our local, and very small, village and found them very interested and helpful, although no hams resided there.

Retired operators who live with relatives or other carers are perhaps the hardest to reach, but the following are among the avenues of approach:

1. Write a short article for your local paper. They are often in need of material.
2. Try and persuade the same paper to print a free advertisement as a public service. Once a week or once a year, it would help.
3. Some health authorities issue a newsletter, seek their help.
4. Bring up the subject on air, you never know who is listening and it may direct you to someone in need, or be the catalyst for the other fellow to take action.
5. Local radio.
6. Walk up and down the main street wearing a sandwich board. No, I am not serious; I am trying to open up your imagination.

I intend to contact specialist interest magazines such as 'Seniors' and 'Mufti', the RSL magazine.

The degree of interaction between you, 'the helper' and the retired operator will depend on his/her needs and your own priorities. For example, if the retiree has trouble arranging transport do you offer to pick them up and return?

Do you give them free rein in your shack while you cut the lawn, or do you hover within arms length?

Questions such as the above can only be answered on an individual basis. Your first conversation together will guide you. I would offer this advice (though I have no 'official' qualifications for doing so) do not overcommit yourself, or you will not be a helper for long.

A fantastic idea mentioned to me recently was the concept of a retirement village aimed primarily at retired operators. Are there any sufficiently cashed up home brewers out there? (Sorry, I could not resist the pun).

I will be very pleased to talk to others on the subject, on air or by landline. (No E-mail, I'm a dinosaur).

Remember, there are no magic wands. It's up to us.

Quick HF antennas

Trevor Quick VK5ATQ

The most important thing to have for anyone able to operate on HF, is some form of antenna.

First, read all the antenna books and spend a year or two getting across the correct methods. Well, we do not have that much time. We wish to get on the air in a few hours. What antennas have you seen in use? What was your first antenna on VHF? A quarter-wave, maybe. Try one on 80 metres. Got a spare 20 metre pole handy? Well, you may be able to find a tree, and don't worry about a few bends.

Hold it!

Let us sit back for a moment and think about what we really want. HF around Australia at night? HF around our state in the daytime? Or are you interested in overseas DX work? For the moment, forget 160 metres. A great band, but not for now.

If you wish to chat around the Australian east coast at night, as well as with some local VK5 stations, and VK6 a little later when the sun has moved further west, choose 80 metres.

The simplest antenna is possibly the dipole. A little long for some back yards at 40 plus metres, but just use a single pole in the middle, and droop the ends towards the ground. A couple of bends won't be noticed. A loaded vertical antenna is smaller but can be a little noisy on receive. Still, if that is all we have room for, then let's try it. If you do find it noisy then transmit on the vertical and receive on a random piece of wire for now. But try the vertical, you may get away with it, and they do work.

For daytime activities, 40 metres is great. Most SSB signals will be found between 7.050 and 7.100 MHz. If we want to form a net, it is time we moved to between 7.100 and 7.200 MHz. A dipole for 40 metres is easier to fit in the backyard, as it is only 20 metres long. That's right, the old half wavelength. Once again, the loaded vertical is available and it may be better for short distances.

Want to work some DX? Twenty metres is great, or even 15, especially into Japan, or around Australia in the daytime. You may find America in our mornings on 15 or 10 metres.

Remember the propagation theory. You know: F layers and the sun, all that ionisation in the upper atmosphere. Now, does it occur in the daytime or at night-time? Where is the sun when we are operating?

Don't forget the old CB antennas, like the Station Master. It is great for 15 and 10 metres. An end-fed half-wave on 15 or 10 can work the world. Experiment by moving the tap to the top of the coil, or disconnect the coil. With a ground-plane or some radials at the base, it makes a fine quarter-wave vertical for 20 metres.

If you have enough trees or other skyhooks you can simply connect all of the dipoles for 80, 40 and 20 at the one coax feed point. Give it a go! Yes, you will get some interaction but this is where the fun really starts. Once you have the dipoles resonant by building them one at a time, connect all the feed points together. If you have some interaction with them, change the angles between the dipoles.

Down the track you will find that 'traps' can work quite well to reduce the number of wires in the sky. Traps made from coaxial cable scraps can be the next experiment. An SWR of less than 1.2 to 1 is nice, but try for that across the whole band! If you're under 1.5 to 1 your radio will work quite well, and at 2 to 1 your in-built, or in-circuit, antenna tuner will hide the problem.

For now, let's just get on the air. Where do I find the wire? Any old 240 volt wire, solid or 7 strand, will do. Just remove the tough sheath near the ends and join the wire with some twist joints and solder. It won't break, well not for many years, and we are experimenting. You will need an insulator in the centre where the coax connects. A piece of plastic works fine. Hold up the antenna ends with plastic cord, preferably black.

Remember the dipole ends will be high voltage points, so no little fingers anywhere near the ends when you transmit. Try to keep them 2 metres or more above ground. When you are tuning the length of the antenna, you will find that as you raise the antenna the resonant frequency will go lower. The greater the antenna height, the lower will be the resonant frequency. That ultimate all-band, high gain antenna is somewhere down the track!

Coax is the most popular feed method. Ordinary RG58 is quite suitable for HF operations. If you have RG59 or 70 ohm coax, you can try it. It often works very well. Remember the half-wave dipole is about 70 ohms, depending on height above ground. Don't forget the open-wire feed. It is not only the cheapest, it also causes the least loss, and will allow you to use a separate antenna tuner to give you multi-band operation.

If you decide to use open wire and an ATU, you may find it better to use a dipole length that is not resonant on an amateur band. For example an 80 metre dipole will be two half wavelengths when used on 40 metres, and exhibit a very high impedance. This may be far too high for the ATU to match. If we are using a quarter-wave radiator, we will need an earth, a ground plane, or we can use a quarter-wave radial or two. But the dipole is balanced, so the earth at the radio end is for safety.

To get started, choose a band or maybe two, just get on the air and have fun. When cutting the wire for your dipole do your measurements by using 300 divided by the frequency in MHz. That gives you the wavelength in metres with some tolerance in length. To be a little closer with wire, you can multiply by about 0.97; ie. shorten by about 3%. Then divide by 2 or 4 for the half or quarter wavelengths. I never use the imperial measurements now. We talk in metres for the band names, why use feet and inches and convert back and forth? That practise is so confusing! Try doing the sums and you will be intrigued by the half wavelength figures when the correction factor is applied. Especially for 2 metres, if you use 300 divided by 2 and multiplied by 0.96.

At least you are on the air. That is the whole aim of this exercise. Have fun and work everyone with a proud feeling of mateship and respect.

Welcome to HF.

BT

Hamads *classifieds* FREE

WANTED ACT

• Shock mount type FT-154 for WWII BC-348 HF receiver to complete restoration project. Greig VK1BSM QTHR 02 6231 5765 or vk1bsm@bigpond.net.au"

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• 15 each US Navy Training books Edition 1965 to 1968 for electronic,radio communication and more. $12 each p.p. VK2EDD Dieter, email: ddauner@bigpond.net.au

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• Service manual for Marconi model TF2700 universal bridge and/or manual for AVO model B.150 unversal bridge. All costs refunded Drew VK3XU 03 9722 1620 QTHR

• AN/TRC24 PARTS I am trying to restore/ complete my AN/TRC24 Radio system and I am looking for tht following parts/units:- • Transmitter, T-302/TRC. Power Supply, PP-685/TRC. Receiver, R-417/TRC. A Band Plug-in AM-1180/ GRC. • Amplifier/converter, AM-2537/TRA-25. Amplifier/Converter, AM-3204/TRC-24. Oscillator/ Multiplier, 0-903A/TRC-24. • Transformer, TF-167/ TRC. and any other bits and pieces for this radio. John Eggington,VK3EGG johne@telpacific.com. au Mobile:- 0409 234 672

WANTED QLD

• Valve/Valve and Cct Tester, any one of the following Laec VCT/3, ET4, University TST/2, TVT or TC2 Valve tester. Pay good price with a manual. Ring Mike VK4MW on 07 5429 5222 or Ray on 07 3410 1039

FOR SALE QLD

• CODAN Mobile H.F. Outback Radiophone, Type 8528, S/No. B5110 with Amateur Option (3.5 to 29.7MHz) and RFDS Emergency Call. Matching Codan Automatic Tuning Whip Antenna Type 8558, S/No.D3785. Remote Control Head, cables, microphone, speaker and handbook. All for $1000. Ken Riding, VK4CKR, QTHR, 07 5529 1646, 0412 615 317, E-mail kwr@optusnet.com.au

FOR SALE SA

• VK5JST Antenna Analyser kits. These world-class kits are available for you to build a very nice piece of equipment for your shack. For more details see www.scarc.org.au; contact SCARC PO Box 333 Morphett Vale SA 5162, or email: kits@scarc.org.au

WANTED SA

• Service manual or copy for TELEQUIPMENT SERISCOPE S5IA all costs met Gwen VK4CB QTHR 07 3202 7137

Are you managing the estate of a 'Silent key'?

Please save any QSLs for the National QSL collection, but first contact:

The Hon. Curator,
Ken Matchett VK3TL
on (03) 9728 5350
or email: jeandawson@iinet.net.au

Rare DX, special call-signs prefixes and suffixes, pictorials and pre-war QSLs are needed.

Let us save something for the history of amateur radio.

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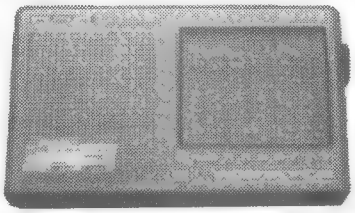

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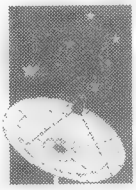

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ADVERTISERS INDEX

AEI 29
[illegible] 13
Amateur Radio Bookshop 19, 55
Andrews 17
Av-com 54
Com-an-tena 9
G & C 16
Featuretech 28
Icom ..... OBC
Jenlex 28
KVK 8
Ozgear 22
Small ads 55
TET-Emtron 49
TTS 23
Vertex ..... IFC
Winlink 28

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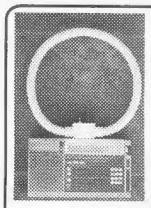

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a radio communications service for the purpose of self training, intercommunication and technical investigation carried out by amateurs, that is, by duly authorised persons interested in radio technique with a personal aim and without any pecuniary interest. 1.56 ITU Radio Regulations.

The Wireless Institute of Australia represents the interests of all amateurs throughout Australia.

The WIA offers one year and 5 year membership for all categories except Concession Student. The fees for each category are Full members $75 ($365), Overseas members $85 ($403), Concession members (pensioner) $70 ($332), Concession members (student) $70, Full members no magazine $50 ($237), Family members $40 ($190)

National Office	Contact	News Bulletin Schedule
10/229 Balaclava Road, Caulfield North VIC 3161, PO Box 2175 Caulfield Junction Vic 3161 Australia	Phone 03 9528 5962, Fax 03 9523 8191, 10am to 4pm daily, nationaloffice@wia.org.au http://www.wia.org.au	Subject to change. See www.wia.org.au follow National News prompts. Contact nationalnews@wia.org.au National VK1WIA news is distributed to all states.

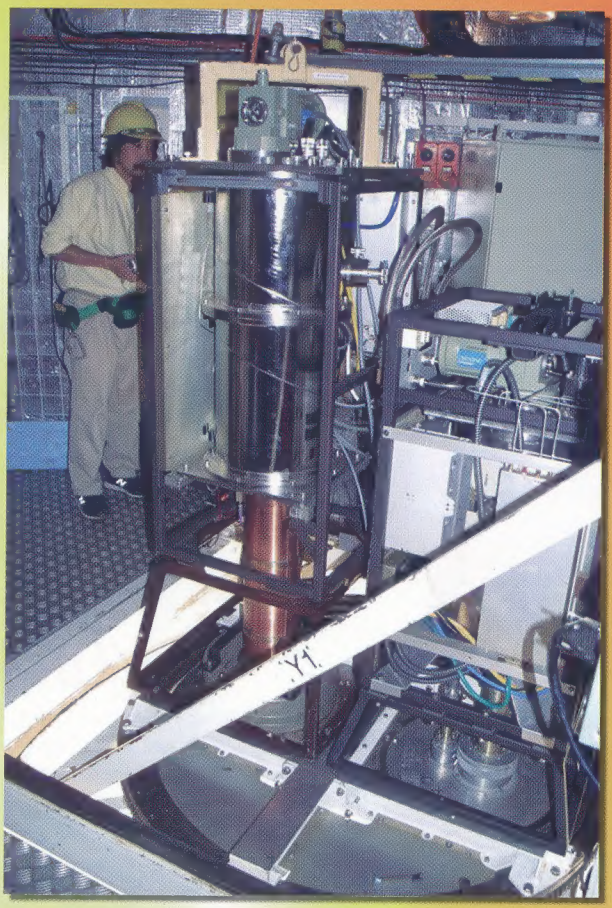
Advisory Committees	Contact	News Bulletin Schedule
VK1 Australian Capital Territory VK1WX Alan Hawes VK1ZPL Phil Longworth VK1ET John Woolner VK1GH Gil Hughes	vk1advisory@wia.org.au	Sundays at 11.00 am VK1WIA 7.128, 146.950,438.050 Canberra Region Amateur Radio Club Email newsletter will be sent on request to president@vk1.ampr.org
VK2 New South Wales VK2QV Chris Flak VK2XCD Chris Devery VK2BFN Adrian Clout	Phone 02 9689 2417 vk2wi@ozemail.com.au vk2advisory@wia.org.au	VK2WI - Sunday 1000 and 1930 hours local.1.845; 3.595; 7.146; 10.125; 14.170; 28.320, 52.525; 145.600; 147.000; 438.525; 1273.500 megahertz. Plus regional relays. VK1WIA news included in the morning
VK3 Victoria VK3JJB John Brown VK3PC Jim Linton VK3APO Peter Mill	Phone 03 9885 9261 arv@amateurradio.com.au	VK1WIA, Sunday 11am and 8pm, 3.615 and 7.085 (LSB), 10.130 (USB), VK3RML 146.700, VK3RMM 147.250, VK3RMU 438.075.
VK4 Queensland VK4BY Don Wilchefski VK4ZZ Gavin Reibelt VK4KF Ken Fuller	vk4advisory@wia.org.au	VK1WIA, Sunday 9.0am via HF and major VHF/UHF rptrs
VK5 South Australia and Northern Territory VK5OV David Box VK5APR Peter Reichelt VK5ATQ Trevor Quick	Phone 08 8294 2992 boxesdnm@lm.net.au peter.reichelt@bigpond.com vk5advisory@wia.org.au	**VK5 South Australia** VK5WI: 0900 am local time. 1.843 LSB, 3.550 LSB, 7.140 LSB, 28.470 USB, 53.1 AM, 147.000 FM Adelaide, 146.900 FM South East, 146.925 FM Central North, 439.975 FM Adelaide North. **VK8 Northern Territory** 0900 local time 3.555 LSB, 7.050 LSB, 10.130 USB, 146.900 FM.
VK6 Western Australia VK6NE Neil Penfold VK6XV Roy Watkins VK6OO Bruce Hedland-Thomas	Phone 08 9351 8873 http://www.vk6.net/ vk6advisory@wia.org.au vk6ne@upnaway.com vk6xv@bigpond.net.au	VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury).147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900,147.000, 147.200, 147.250 and 147.350 MHz..Also in "Realaudio" format from the VK6 WIA website
VK7 Tasmania VK7ZAX Phil Corby VK7DG Dale Barnes VK7KK Reg Emmett	Phone 03 6234 3553 vk7advisory@wia.org.au phil.corby@tassie.net.au vk7dg@wia.org.au regemm@ozemail.com.au	VK1WIA Sunday 9am on VK7WI network: 3.570MHz LSB, 146.700 MHz FM (VK7RHT South), 53.825MHZ FM (VK7RAD South), 147.000MHz FM (VK7RAA North), 146.750 FM & 53.825MHz (VK7RNW North West), 146.625 MHz FM (VK7RMD North West), UHF CB Channel 15 (Hobart) and 27MHz CB - 27.225MHz LSB (Hobart). Followed at 9:30am with VK7 Regional News Broadcast also on 7.090MHz LSB & 14.130MHz USB

Notes

1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

An eye on the sky

Photos by Emil Lenc.



Owned and operated by CSIRO, the Parkes Radio Telescope is a working scientific instrument and as such is closed to the public. The Parkes Radio Telescope is located 20 km north of Parkes on the Newell Highway in NSW. Normally, visitors can walk around near the facility and explore the Visitor's Centre.

The highlight of the WIA Annual General Meeting weekend will be a series of detailed "technical" tours through the Parkes Radio Telescope Facility made available for WIA members. This will be a once in a lifetime opportunity for most members to step inside one of the world's most active and powerful Radio Telescopes and to be able to ask technical questions of the site engineers.

If you plan to attend, make sure that you complete the registration form, part of the AGM material included in the March issue of AR, and also available for download from the WIA web site.

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